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TO: Alton Pryor
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Art Unit: 1616
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4c70

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 FILE LAST UPDATED: 7 Jul 2004 (20040707/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

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 L1 1431 SEA FILE=REGISTRY ABB=ON PLU=ON GLUFOSINAT?(L)AMMONIU? OR GLYPHOSAT?
 L2 8512 SEA FILE=REGISTRY ABB=ON PLU=ON SUCCINIC(W)ACID
 L3 6167 SEA FILE=HCAPLUS ABB=ON PLU=ON L1 OR ?GLUFOSINAT?(2A)?AMMONIU ? OR ?GLYPHOSAT?
 L4 180633 SEA FILE=HCAPLUS ABB=ON PLU=ON L2 OR SUCCINIC?(W)ACID?
 L5 41 SEA FILE=HCAPLUS ABB=ON PLU=ON L3 (L)L4
 L6 31 SEA FILE=HCAPLUS ABB=ON PLU=ON L5 AND ?HERBICID?

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L6 ANSWER 1 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2004:430601 HCAPLUS
 DOCUMENT NUMBER: 140:401765
 TITLE: Solid **herbicidal** glyphosate formulation
 INVENTOR(S): Vigil, Jorge Gustavo; Ruiz, Martha Maria Del Carmen; Anacabe, Dante Omar
 PATENT ASSIGNEE(S): Argent.
 SOURCE: U.S. Pat. Appl. Publ., 5 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004102323	A1	20040527	US 2003-714870	20031118
PRIORITY APPLN. INFO.:			AR 2002-104441	A 20021119

AB A solid **herbicidal** formulation of glyphosate is described, in

powder, granule, or flake form, soluble or dispersible in water, containing glyphosate in the form of hydrosol. salt and also including 5-30% weight % of one or more surfactants, soluble in water, compatible with glyphosate and which are solid at ambient temperature, i.e. at approx. 25°.

IT 577-11-7; Sodium dioctylsulfosuccinate

RL: MOA (Modifier or additive use); USES (Uses)

(solid **herbicidal glyphosate** formulation containing)

L6 ANSWER 2 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2004:203594 HCAPLUS

DOCUMENT NUMBER: 140:230951

TITLE: Manufacture of a dry **herbicidal** composition containing a water-soluble glyphosate salt and a dicarboxylate

INVENTOR(S): Graham, Jeffrey Alan; Abraham, William; Wang, John T.; Calabotta, Beth J.; Massmann, Brent D.; Miller, William H.

PATENT ASSIGNEE(S): Monsanto Technology LLC, USA

SOURCE: PCT Int. Appl., 82 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004019684	A2	20040311	WO 2003-US27229	20030829
<p>W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU</p> <p>RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG</p>				
US 2004077499	A1	20040422	US 2003-653332	20030902

PRIORITY APPLN. INFO.:

US 2002-407479P P 20020831

AB A dry **herbicidal** composition comprises a water-soluble salt of glyphosate, a dicarboxylate, and optionally an adjuvant. The glyphosate component is combined with a dicarboxylate component and optionally an adjuvant component to form an enhanced **herbicide** composition. The glyphosate component and/or the dicarboxylate component may be combined in their salt form or either or both may be combined in acid form and reacted in the mixture with a base component to form the corresponding salt.

IT 87-69-4, Tartaric acid, biological studies 110-15-6,

Succinic acid, biological studies 6915-15-7,

Malic acid

RL: AGR (Agricultural use); MOA (Modifier or additive use); BIOL

(biological study); USES (Uses)

(manufacture of a dry **herbicidal** composition containing a water-soluble **glyphosate** salt and a dicarboxylate)

L6 ANSWER 3 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2004:203591 HCAPLUS

DOCUMENT NUMBER: 140:230950

TITLE: **Herbicidal** compositions containing dicarboxylic acids to enhance efficacy of glyphosate concentrates and tank mixes

INVENTOR(S): Abraham, William; Stern, Michael K.; Graham, Jeffrey Alan; Xu, Xiaodong Chris; Brinker, Ronald J.; Travers, Jeffrey N.; Reynolds, Tracey L.
 PATENT ASSIGNEE(S): Monsanto Technology LLC, USA
 SOURCE: PCT Int. Appl., 331 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004019681	A2	20040311	WO 2003-US27195	20030829

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2004097372	A1	20040520	US 2003-653049	20030829
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PRIORITY APPLN. INFO.: US 2002-407180P P 20020831

OTHER SOURCE(S): MARPAT 140:230950

AB Solid and liquid pesticidal concs. and spray compns. are described which exhibit enhanced weed control efficacy due to the addition of a compound which increases 5-enolpyruvylshikimate 3-phosphate synthase (EPSPS) enzyme inhibition by the pesticide, cell membrane permeability, or expression of hydroxyproline-rich glycoproteins. The enhancer comprises a dicarboxylic acid or derivative or precursor, with the molar ratio of glyphosate component to dicarboxylic acid component ranging .apprx.0.18 to .apprx.16 on acid equivalent basis. Thus, ammonium glyphosate was formulated with various dicarboxylic acids along with cationic and nonionic surfactants. Oxalic acid gave the greatest efficacy on velvetleaf; adipic acid provided some efficacy enhancement on Japanese millet.

IT 97-67-6, L-Malic acid
 RL: AGR (Agricultural use); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses)

(dicarboxylic acids, derivs., and precursors enhancement of **herbicidal** efficacy of **glyphosate** concs. and tank mix formulations)

IT 5138-18-1D, Sulfosuccinic acid, esters or salts
 RL: AGR (Agricultural use); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses)

(dicarboxylic acids, derivs., and precursors enhancement of **herbicidal** efficacy of **glyphosate** concs. and tank mix formulations containing)

IT 87-69-4, Tartaric acid, biological studies 110-15-6, Succinic acid, biological studies 6915-15-7, Malic acid

RL: AGR (Agricultural use); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses)

(**herbicidal** formulations containing dicarboxylic acids, derivs., or precursors to enhance weed control efficacy of **glyphosate** concs. and tank mixes)

L6 ANSWER 4 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2003:525329 HCAPLUS

DOCUMENT NUMBER: 139:80701
 TITLE: Mineral microgranule-supported mixed **herbicides** containing glufosinate-ammonium
 INVENTOR(S): Kawada, Hiroshi; Kikuta, Seiji; Yoshida, Ruriko; Tadenuma, Yoshinori; Taniguchi, Kiyoshi
 PATENT ASSIGNEE(S): Hodogaya Agros Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003192511	A2	20030709	JP 2001-403034	20011227
WO 2003055312	A1	20030710	WO 2002-JP13846	20021227

W: AU, US

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR

PRIORITY APPLN. INFO.: JP 2001-403034 A 20011227

AB The **herbicides**, which are prevented from reduction in effect of glufosinate-ammonium (I) due to meteorol. changes such as dryness, strong wind, strong rain, etc. and act not only on stems and leaves but also in soil, are manufactured by mixing I with 1 or 2 photosynthesis inhibiting **herbicides** selected from a group (A) isouron, karbutilate, diuron, tebuthiuron, linuron, cyanazine, prometryn, metribuzin, terbacil, and bromacil and attaching the mixture to mineral carriers having mol. distribution 0.1-0.3 mm. Instead of (A), 1 or 2 plant hormones selected from a group (B) 2,4-D, MCPA, mecoprop, triclopyr, their salts and their esters, 1 or 2 protoporphyrinogen oxidase inhibitors selected from a group (C) oxadiargyl, carfentrazone-Et, flumioxazin, bifenox, and pyraflufen-Et, or 1 or 2 other **herbicides** selected from a group (D) diflufenican, dichlobenil, and chlorthiamid. Two compds. selected from 2 different groups may be used. A microgranular leaf spray was prepared by mixing Zeogreen Particulates Size 8 (clinoptilolite zeolite), Basta (a liquid preparation of I), isouron, Airrol CT 1 (dioctyl sulfosuccinate)-ethylene glycol mixture, and Carplex 80D. **Herbicidal** effect of the spray on *Setaria viridis*, *Amaranthus retroflexus*, *Chenopodium album*, etc., was shown.

IT 577-11-7, Airrol CT 1

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
 (deposition aid; mineral microgranule-supported **herbicides** containing glufosinate-ammonium and photosynthesis inhibitors, plant hormone **herbicides** and protoporphyrinogen oxidase inhibitors)

L6 ANSWER 5 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:525328 HCAPLUS
 DOCUMENT NUMBER: 139:80700
 TITLE: Mineral carrier-supported mixed **herbicidal** microgranules containing glyphosate
 INVENTOR(S): Kawada, Hiroshi; Kikuta, Seiji; Yoshida, Ruriko; Tadenuma, Yoshinori
 PATENT ASSIGNEE(S): Hodogaya Agros Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003192510	A2	20030709	JP 2001-403033	20011227
WO 2003055313	A1	20030710	WO 2002-JP13847	20021227

W: AU, US

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT,
LU, MC, NL, PT, SE, SI, SK, TR

PRIORITY APPLN. INFO.: JP 2001-403033 A 20011227

AB The microgranules, which are prevented from reduction in effect of glyphosate [N-(phosphonomethyl)glycinate] (I) due to meteorol. changes such as dryness, strong wind, strong rain, etc. and act not only on stems and leaves but also in soil, are manufactured by mixing I with 1 or 2 photosynthesis inhibiting **herbicides** selected from a group (A) isouron, karbutilate, diuron, tebuthiuron, linuron, cyanazine, prometryn, metribuzin, terbacil, and bromacil and attaching the mixture to mineral carriers having mol. distribution 0.1-0.3 mm. Instead of (A), 1 or 2 plant hormones selected from a group (B) 2,4-D, MCPA, mecoprop, triclopyr, their salts, and their esters, 1 or 2 protoporphyrinogen oxidase inhibitors selected from a group (C) oxadiargyl, carfentrazone-Et, flumioxazin, and pyraflufen-Et, or 1 or 2 other **herbicides** selected from a group (D) glufosinate-ammonium, diflufenican, dichlobenil, and chlorthiamid. Two compds. selected from 2 different groups may be used. A microgranular leaf spray was prepared by mixing Zeogreen Particulates Size 8 (clinoptilolite zeolite), Roundup, isouron, Airrol CT 1 (dioctyl sulfosuccinate)-ethylene glycol mixture, and Carplex 80D. **Herbicidal** effect of the spray on Setaria viridis, Amaranthus retroflexus, Chenopodium album, etc., was shown.

IT 577-11-7, Airrol CT 1

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(deposition aid; mineral microgranule-supported **herbicides**
containing **glyphosate** salts and photosynthesis inhibitors, plant
hormone **herbicides** and protoporphyrinogen oxidase inhibitors)

L6 ANSWER 6 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:927147 HCAPLUS

DOCUMENT NUMBER: 138:1333

TITLE: Stable liquid pesticide emulsion or microemulsion
concentrates containing glyphosateINVENTOR(S): Pallas, Norman R.; Gillespie, Jane L.; Singh, Lata;
Xu, Xiaodong C.

PATENT ASSIGNEE(S): Monsanto Technology LLC, USA

SOURCE: PCT Int. Appl., 331 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 7

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002096199	A2	20021205	WO 2002-US16032	20020521
WO 2002096199	A3	20031224		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU,
TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

WO 2001089302 A2 20011129 WO 2001-US16550 20010521
 WO 2001089302 A3 20030626
 W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CO, CR,
 CU, CZ, DE, DK, DM, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU,
 ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU,
 LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE,
 SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA,
 ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
 BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
 US 2003087764 A1 20030508 US 2001-988352 20011119
 EP 1395116 A2 20040310 EP 2002-729271 20020521
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

PRIORITY APPLN. INFO.:

WO 2001-US16550 W 20010521
 US 2001-926521 A 20011114
 US 2001-988352 A 20011119
 US 2000-205524P P 20000519
 US 2000-206628P P 20000524
 US 2001-273234P P 20010302
 US 2001-274368P P 20010308
 US 2001-16550 A 20011210
 US 2002-926521 A2 20020426
 WO 2002-US16032 W 20020521

OTHER SOURCE(S): MARPAT 138:1333

AB An aqueous pesticidal concentrate emulsions or microemulsions comprise a water-soluble pesticide, such as the **herbicide** glyphosate or its salt, a substantially water-immiscible organic solvent, and a surfactant component, comprising one or more surfactant, such as amine or quaternary ammonium salt compds. The composition is storage stable after exposure to temps. ranging from 60 °C to -20 °C.
 IT 577-11-7, Sodium dioctyl sulfosuccinate 6915-15-7, Malic acid
 RL: MOA (Modifier or additive use); USES (Uses)
 (in stable liquid pesticide emulsion or microemulsion concs. containing **glyphosate**)

L6 ANSWER 7 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:315456 HCAPLUS
 DOCUMENT NUMBER: 136:320800
 TITLE: Water-soluble glyphosate tablets
 INVENTOR(S): Hamroll, Bernd; Dittrich, Gunter; Muller, Bernd
 PATENT ASSIGNEE(S): Schirm Ag, Germany
 SOURCE: U.S. Pat. Appl. Publ., 4 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002049140	A1	20020425	US 2001-969168	20011002
US 6475954	B2	20021105		
DE 10052489	A1	20020502	DE 2000-10052489	20001023
EP 1203532	A1	20020508	EP 2001-115068	20010621
R:			AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR	

PRIORITY APPLN. INFO.: DE 2000-10052489 A 20001023
 AB Disclosed is a solid formulation of the **herbicidal** active agent

glyphosate [N-(phosphonomethyl)glycine] compressed into tablet form. It is applied in the agricultural and horticultural sectors to destroy unwanted vegetation. The solid formulation according to the invention consists essentially of free glyphosate acid, salifying agents (alkali or ammonium hydrogencarbonate or carbonate in conjunction with solid organic acids), biol. activating agents and diluents. A suitably sized tablet can consequently be adapted to supply an appropriate dose of spray mixture per surface unit for small-scale users. Submerging in water causes the glyphosate to convert into a soluble salt. The resulting carbon dioxide facilitates rapid disintegration of the tablet.

IT 5138-18-1, Butanedioic acid, sulfo-
 RL: MOA (Modifier or additive use); USES (Uses)
 (alkyl ethers; water-soluble **glyphosate** tablets containing)

L6 ANSWER 8 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:617758 HCAPLUS

DOCUMENT NUMBER: 135:176742

TITLE: **Herbicidal** compositions containing
 glyphosate or glufosinate with amino acids, peptides
 and protein fragments

INVENTOR(S): Giberti, Modesto

PATENT ASSIGNEE(S): Chemia S.p.A., Italy

SOURCE: PCT Int. Appl., 13 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001060160	A1	20010823	WO 2001-EP1542	20010213
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				

PRIORITY APPLN. INFO.: IT 2000-FE3 A 20000216

AB Combined use of glyphosate and(or) glufosinate with at least one component selected from amino acids, peptides and protein fragments increases the **herbicidal** activity as compared with conventional formulations of the same active ingredients, reducing the period necessary for killing the weeds. Thus, the following formulation was prepared: water 38.5, 30% ammonia 20, 95% glyphosate (acid) 31, and amino acids (60 % solution) 10.5 g; the solution of glyphosate-ammonium salt was added to 60% amino acids solution and then diluted to a final concentration of acid-equivalent glyphosate of 360 g/L.

On 2 farms with large weeds in the vegetative stage, the formulation at 5 L/ha caused complete darkening and tissue disintegration after 10 days, whereas a com. formulation of acid-equivalent glyphosate of 360 g/L the same effect occurred after 15 days.

IT 56-84-8, L-Aspartic acid, biological studies
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
 (**herbicidal** formulations containing **glyphosate** or
 glufosinate with amino acids, peptides and protein fragments)

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 9 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2001:185505 HCAPLUS
 DOCUMENT NUMBER: 134:218319
 TITLE: Surfactant mixtures enhancing **herbicidal**
 activity of glyphosate
 INVENTOR(S): Becher, David Z.; Wideman, Al S.; Forbes, James C.
 PATENT ASSIGNEE(S): Monsanto Company, USA
 SOURCE: PCT Int. Appl., 27 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE									
WO 2001017358	A1	20010315	WO 2000-US24322	20000905									
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG													
BR 2000013851	A	20020514	BR 2000-13851	20000905									
EP 1209978	A1	20020605	EP 2000-961545	20000905									
EP 1209978	B1	20030625											
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL													
AT 243426	E	20030715	AT 2000-961545	20000905									
JP 2003528033	T2	20030924	JP 2001-521161	20000905									
NZ 517124	A	20030926	NZ 2000-517124	20000905									
AU 766395	B2	20031016	AU 2000-73486	20000905									
ES 2200929	T3	20040316	ES 2000-961545	20000905									
PRIORITY APPLN. INFO.: <table border="0" style="margin-left: 200px;"> <tr> <td>US 1999-153140P</td> <td>P</td> <td>19990909</td> </tr> <tr> <td>US 2000-652771</td> <td>A</td> <td>20000831</td> </tr> <tr> <td>WO 2000-US24322</td> <td>W</td> <td>20000905</td> </tr> </table>					US 1999-153140P	P	19990909	US 2000-652771	A	20000831	WO 2000-US24322	W	20000905
US 1999-153140P	P	19990909											
US 2000-652771	A	20000831											
WO 2000-US24322	W	20000905											

OTHER SOURCE(S): MARPAT 134:218319

AB A method is provided of enhancing the **herbicidal** activity of a glyphosate **herbicide**, comprising adding to the glyphosate **herbicide** a mixture of a first surfactant and a second surfactant at a weight ratio of total surfactant to glyphosate of about 1:30 to about 2:1, wherein the first surfactant has a chemical structure comprising a cationic or protonatable amino group and a C8-24 (un)branched, (un)saturated hydrocarbyl group, and the second surfactant has the formula R-CO-NR1-(CR12)n-COOM [R = C7-23 (un)branched, (un)saturated hydrocarbyl group; n = 1-4; M = H, or a cationic counterion; R1 = H, C1-4 alkyl, or -(CH2)m-COOM, (m = 1-4, M is defined above), with the proviso that no more than one R1 group is such a group -(CH2)m-COOM]; the weight ratio of the first to the second surfactant being about 1:10 to about 10:1. Also provided is a **herbicidal** composition prepared according to the above method. The first and second surfactants exhibit a synergistic interaction in enhancing **herbicidal** activity of the glyphosate **herbicide**.

IT 56-84-8D, L-Aspartic acid, derivs., uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (surfactant mixts. enhancing **herbicidal** activity of
glyphosate containing)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 10 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2000:357860 HCAPLUS

DOCUMENT NUMBER: 133:104430

TITLE: Glyphosate-Tolerant Corn: The Composition and Feeding

Value of Grain from Glyphosate-Tolerant Corn Is

Equivalent to That of Conventional Corn (Zea mays L.)

AUTHOR(S): Sidhu, Ravinder S.; Hammond, Bruce G.; Fuchs, Roy L.;

Mutz, Jean-Noel; Holden, Larry R.; George, Beverly;

Olson, Tammy

CORPORATE SOURCE: Monsanto Company, St. Louis, MO, 63198, USA

SOURCE: Journal of Agricultural and Food Chemistry (2000),

48(6), 2305-2312

CODEN: JAFCAU; ISSN: 0021-8561

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Glyphosate-tolerant (Roundup Ready) corn line GA21 has been developed by genetic modification to tolerate glyphosate, the active ingredient in Roundup **herbicide**. The purpose of this study was to evaluate the compositional and nutritional safety of corn line GA21 compared to that of conventional corn. Compositional analyses were conducted to measure proximate, fiber, amino acid, fatty acid, and mineral contents of grain and proximate, fiber, and mineral contents of forage collected from 16 field sites over two growing seasons. The nutritional safety of corn line GA21 was evaluated in a poultry feeding study conducted with 2-day old, rapidly growing broiler chickens, at a dietary concentration of 50-60% weight/weight. Compositional anal. results showed that, except for a few minor differences that are unlikely to be of biol. significance, the grain and forage of GA21 corn were comparable in their composition to that of the control corn line and to conventional corn. Results from the poultry feeding study showed that there were no differences in growth, feed efficiency, adjusted feed efficiency, and fat pad wts. between chickens fed with GA21 grain or with parental control grain. These data taken together demonstrate that Roundup Ready corn is as safe and nutritious as conventional corn for food and feed use.

IT 56-84-8, Aspartic Acid, biological studies

RL: BOC (Biological occurrence); BSU (Biological study, unclassified);

BIOL (Biological study); OCCU (Occurrence)

(**glyphosate**-tolerant corn grain composition and feeding value and equivalence to conventional corn variety)

REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 11 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1998:668003 HCAPLUS

DOCUMENT NUMBER: 129:299240

TITLE: Sequential application method for enhancing glyphosate

herbicidal effectiveness, with reduced

antagonism

INVENTOR(S): Sandbrink, Joseph J.; Warner, James M.; Wright, Daniel

R.; Feng, Paul C. C.

PATENT ASSIGNEE(S): Monsanto Co., USA

SOURCE: U.S., 62 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 5821195 A 19981013 US 1996-698883 19960816
 PRIORITY APPLN. INFO.: US 1996-698883 19960816
 AB A novel **herbicidal** method is provided, wherein plants are first treated with a glyphosate **herbicide** and then sequentially treated with a liquid accession agent which provides improved **herbicidal** effectiveness, such that plants are controlled with lower rates of the applied **herbicide**. Sequential application has been demonstrated to reduce the antagonism to **herbicidal** effectiveness that may be exhibited when the accession agent is added to the **herbicide** in a tank mix or coformulation. Typical accession agents include a class of surfactants known as superwetting agents, such as certain silicone-based and fluorocarbon-based surfactants.
 IT 577-11-7, Aerosol OT
 RL: AGR (Agricultural use); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses)
 (sequential application accession agent for enhancing **glyphosate herbicidal** effectiveness, with reduced antagonism)
 REFERENCE COUNT: 114 THERE ARE 114 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 12 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1998:13808 HCAPLUS
 DOCUMENT NUMBER: 128:85447
 TITLE: **Succinic acid** derivative adjuvant surfactants for **glyphosate**
 INVENTOR(S): Auda, Mahroussa; Reekmans, Steven Irene Jozef
 PATENT ASSIGNEE(S): Imperial Chemical Industries PLC, UK; Auda, Mahroussa; Reekmans, Steven Irene Jozef
 SOURCE: PCT Int. Appl., 14 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9747199	A1	19971218	WO 1997-GB1484	19970602
W: AU, BR, CA, JP, KR, MX, NZ, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9729717	A1	19980107	AU 1997-29717	19970602
EP 906018	A1	19990407	EP 1997-924150	19970602
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
BR 9709777	A	19990810	BR 1997-9777	19970602
NZ 332929	A	20000825	NZ 1997-332929	19970602
JP 2000511924	T2	20000912	JP 1998-501335	19970602
ZA 9705041	A	19971211	ZA 1997-5041	19970606
KR 2000016480	A	20000325	KR 1998-710065	19981209

PRIORITY APPLN. INFO.: GB 1996-12197 A 19960611
 WO 1997-GB1484 W 19970602

AB Surfactant adjuvants R1CH(CONR3R4)CHR2(COR5) [R1,R2 = H or C6-22 alkyl or alkenyl; R3 = polyhydroxy hydrocarbyl; R4 = H or C1-22 hydrocarbyl; R5 = (un)substituted NH2 or alkylene oxide residues] are used particularly with glyphosate to kill weed species difficult to kill. Examples of such weeds are dicotyledons, such as *Chenopodium album*, *Solanum nigrum*, *Lactuca saligna*, *Amaranthus retroflexus*, *Erigeron canadensis* and *Cirsium arvense* and perennial monocotyledons, such as *Lolium perenne*, *Convolvulus arvensis* and, esp. *Agropyron repens*.

L6 ANSWER 13 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:560486 HCAPLUS

DOCUMENT NUMBER: 125:188337

TITLE: **Herbicidal** compositions comprising
glyphosate, activating surfactant and polyurea,
polyurethane, or polyurea-urethane

INVENTOR(S): Parker, Brian A.; Holejko, Longin V.

PATENT ASSIGNEE(S): Hampshire Chemical Corp., USA

SOURCE: PCT Int. Appl., 34 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9620593	A1	19960711	WO 1995-US17016	19951215
W: AU, BR, CA, CN, JP, KR, MX, SG, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5543383	A	19960806	US 1994-368204	19941230
ZA 9510560	A	19960613	ZA 1995-10560	19951212
CA 2205051	AA	19960711	CA 1995-2205051	19951215
AU 9645302	A1	19960724	AU 1996-45302	19951215
AU 692986	B2	19980618		
EP 800342	A1	19971015	EP 1995-943986	19951215
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE				
BR 9510126	A	19971111	BR 1995-10126	19951215
CN 1171720	A	19980128	CN 1995-197161	19951215
JP 11502190	T2	19990223	JP 1995-520069	19951215
IN 184438	A	20000826	IN 1995-DE2343	19951218
PRIORITY APPLN. INFO.:			US 1994-368204	A 19941230
			WO 1995-US17016	W 19951215

AB A **herbicidal** composition includes isocyanate-capped high mol. weight diols, triols and polyols. Glyphosate and/or a **herbicidally** active derivative thereof such as a glyphosate salt is combined with hydrophilic isocyanate end-capped prepolymers in order to improve the efficacy of the **herbicide**. A combination of surfactant, glyphosate, and a hydrated polymer or hydrophilic prepolymer consisting of isocyanate-capped prepolymers which are comprised of ethylene oxide, propylene oxide or butylene oxide units or a combination thereof demonstrates increased efficacy over conventional glyphosate formulations. The liquid **herbicidal** compns. of the invention can be prepared by simply mixing the various constituents. The order of addition can be used effectively to cap free isocyanate groups in the hydrophilic prepolymer. A mixture of 28 g Hypol PreMA G-50 and 972 g water was stirred for 2 h, followed by the addition of 100 glyphosate and pH adjustment to 4.8 (isopropylamine), to give a solution which upon drying gave a strong elastic film.

IT **29454-16-8D**, Sodium sulfosuccinate, esters
 RL: MOA (Modifier or additive use); USES (Uses)
 (surfactants; **herbicidal** compns. comprising
glyphosate and)

L6 ANSWER 14 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:473212 HCAPLUS

DOCUMENT NUMBER: 125:145634

TITLE: Succinic acid derivatives and their manufacture and
uses as surfactants in agrochemical formulations,
pigment dispersions, and home detergents

INVENTOR(S): Anderson, Steven John; Carpenter, Neil Michael

PATENT ASSIGNEE(S): Imperial Chemical Industries Plc, UK

SOURCE: PCT Int. Appl., 31 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9616930	A1	19960606	WO 1995-GB2785	19951129
W: AU, BG, BR, CA, CN, CZ, FI, HU, JP, KR, LK, MK, MX, NO, NZ, PL, RO, RU, SG, SI, SK, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
IL 116182	A1	20001031	IL 1995-116182	19951128
CA 2205867	AA	19960606	CA 1995-2205867	19951129
AU 9539867	A1	19960619	AU 1995-39867	19951129
AU 695780	B2	19980820		
EP 794940	A1	19970917	EP 1995-938497	19951129
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
BR 9509852	A	19971230	BR 1995-9852	19951129
JP 10510287	T2	19981006	JP 1995-518429	19951129
NZ 296146	A	20000128	NZ 1995-296146	19951129
US 5798331	A	19980825	US 1997-849099	19970519
PRIORITY APPLN. INFO.:			GB 1994-24353	A 19941202
			WO 1995-GB2785	W 19951129

OTHER SOURCE(S): MARPAT 125:145634

AB The title derivs. have the general formula R1CH[CH(R2)COR5]CONR3R4 [R1, R2 = C6-22 alkenyl, alkyl, with one of R1 and R2 being H; R3 = polyhydroxy hydrocarbyl; R4 = H, C1-22 hydrocarbyl, R3; R5 = NR3R4, O(AO)nR6; A = alkylene; n = 1-200; R6 = H, C1-22 hydrocarbyl, R1CH(CONR3R4)CH(R2)CO, NR7R8; R7 = H, C1-22 hydrocarbyl; R8 = C1-22 hydrocarbyl; NR7R8 = pyrrolidino, piperidino, morpholino, (un)substituted piperazino, NH(AO)nR9, NH(AO)pCH2CH2OR10; R9 = C1-22 hydrocarbyl; R10 = C1-22 hydrocarbyl, R1CH(CONR3R4)CH(R2)CO]. Dodecenylsuccinic anhydride was esterified with MeOH then treated with N-methylglucamine to obtain dodecenylsuccinic acid bis(N-methylglucamide) (I). A heavy duty nonaq. laundry liquid comprised Na disilicate 2.0, optical brightener 0.3, EDTA 0.2, CM-cellulose 1.0, TiO2 0.2, Na carbonate 4.9, Na tripolyphosphate 40.9, PEG 200 39.4, and I 10.0 parts.

IT 1071-83-6, Glyphosate 81591-81-3, Sulfosate
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
 (herbicide; succinic acid derivs. and
 their manufacture and uses as surfactants in agrochem. formulations, pigment dispersions, and home detergents)

L6 ANSWER 15 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1994:451971 HCAPLUS
 DOCUMENT NUMBER: 121:51971
 TITLE: Glufosinate ammonium-some aspects of its mode of action in mammals
 AUTHOR(S): Hack, R.; Ebert, E.; Ehling, G.; Leist, K. H.
 CORPORATE SOURCE: Hoechst Aktiengesellschaft, Frankfurt, D-65926, Germany
 SOURCE: Food and Chemical Toxicology (1994), 32(5), 461-70
 CODEN: FCTOD7; ISSN: 0278-6915
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The broad-spectrum herbicide glufosinate ammonium is a structural analog of glutamate and acts in plants by inhibition of glutamine synthetase leading to a complete breakdown of ammonia metabolism. After oral administration for 28 days, glufosinate ammonium had no effect on glutathione and carbohydrate metabolism and no effect on biosynthesis of

non-essential amino acids in rats and dogs. Glufosinate ammonium does not interfere with various neurotransmitter receptors in vitro and does not influence the catecholamine neurotransmitter tissue concns. after i.v. application. The results of these studies show that in contrast to the plant metabolism, in mammals the inhibition of glutamine synthetase activity in various tissues does not lead to a breakdown of ammonia metabolism. The mammalian metabolism obviously compensates for this inhibition of glutamine synthetase activity by various other metabolic pathways. Thus, under the conditions of recommended use of glufosinate ammonium as an active ingredient in **herbicides**, a detrimental effect on the health of both users and consumers is extremely unlikely.

IT 56-84-8, Aspartic acid, biological studies

RL: BIOL (Biological study)

(of organ, **glufosinate ammonium** effect on)

L6 ANSWER 16 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1994:2806 HCAPLUS

DOCUMENT NUMBER: 120:2806

TITLE: Water-soluble pesticidal composition containing a semisulfosuccinate derivative

INVENTOR(S): Bramatti, Valerio; Marchetto, Antonio

PATENT ASSIGNEE(S): Rhone-Poulenc Geronazzo S.p.A., Italy

SOURCE: Eur. Pat. Appl., 10 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 569264	A1	19931110	EP 1993-401004	19930416
EP 569264	B1	19961106		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
FR 2690812	A1	19931112	FR 1992-5520	19920505
AT 144880	E	19961115	AT 1993-401004	19930416
ES 2095595	T3	19970216	ES 1993-401004	19930416
AU 9338265	A1	19931111	AU 1993-38265	19930428
AU 670580	B2	19960725		
JP 07089802	A2	19950404	JP 1993-124759	19930430
JP 2882596	B2	19990412		
BR 9301747	A	19931116	BR 1993-1747	19930504

PRIORITY APPLN. INFO.: FR 1992-5520 19920505

AB Water-soluble compns. comprise a pesticide or **herbicide**, preferably glyphosate or its salts, and a semisulfosuccinate RO(AO)nCOR1 [R = C13-20 alkyl; R1 = CH(SO3-M1)CH2COO-M or CH2CH(SO3-M)COO-M; M, M1 = H, alkali metal, alkaline-earth metal, NH4; A = C2-4 alkylene; n = 1-10]. Unlike the conventional ethoxylated amines used for these formulations, the semisulfosuccinates are nontoxic, biodegradable, and compatible with many pesticides.

IT 5138-18-1D, Sulfosuccinic acid, derivs.

RL: BIOL (Biological study)

(**glyphosate** salt formulations containing)

L6 ANSWER 17 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1992:607088 HCAPLUS

DOCUMENT NUMBER: 117:207088

TITLE: Effects of SC-0224 and glyphosate on free amino acids, soluble protein, and protein synthesis in inflated duckweed (*Lemna gibba*)

AUTHOR(S): Cooley, William E.; Foy, Chester L.

CORPORATE SOURCE: Dep. Plant Pathol. Physiol., Weed Sci., Virginia

Polytech. Inst. and State Univ., Blacksburg, VA,
24061, USA

SOURCE: Weed Science (1992), 40(3), 345-50
CODEN: WEESA6; ISSN: 0043-1745

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Effects of the **herbicides** SC-0224 and glyphosate on the pool levels of free amino acids, soluble protein, and protein synthesis in inflated duckweed were compared. SC-0224 caused larger increases than glyphosate in the pool levels of amino acids; the increases caused by SC-0224 were similar, however, to those caused by trimethyl-sulfonium iodide (TMS-I). Expressed on a per g fresh weight basis, none of the treatments changed soluble protein or the incorporation of [14C]leucine into soluble protein. On a per flask basis (allowing for decreased growth in treated flasks), both **herbicides** and TMS-I decreased soluble protein and [14C]leucine incorporation. Decreased in soluble protein and [14C]leucine incorporation were equal for SC-0224 and TMS-I but larger than for glyphosate. Thus, differences in the phytotoxicity of SC-0224 and glyphosate may be due to the action of the trimethylsulfonium portion of the SC-0224 structure.

IT 56-84-8, L-Aspartic acid, biological studies
RL: BIOL (Biological study)
(of duckweed, SC-0224 and **glyphosate** effect on)

L6 ANSWER 18 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1990:134414 HCAPLUS

DOCUMENT NUMBER: 112:134414

TITLE: Effects of glyphosate on phenolic compounds and free amino acids in oat seedlings

AUTHOR(S): Falco, J. M.; Vilanova, L.; Segura, J.

CORPORATE SOURCE: Fac. Farm., Univ. Valencia, Valencia, Spain

SOURCE: Agrochimica (1989), 33(3), 166-73
CODEN: AGRCAX; ISSN: 0002-1857

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Roots of dark grown oat (Avena sativa) seedlings were treated with glyphosate (0.1 and 1 mM) for 3 days in darkness. Glyphosate increased root total phenols and decreased free amino acids, mostly by depressing isoleucine and ornithine. In shoots phenolics were not affected and the effect on free amino acids varied with glyphosate concentration. At 0.1 mM, there was a general increase while at 1 mM aromatic amino acids were not affected, except tryptophan which was increased. Thus, glyphosate exercise its principal action by alternating metabolism of aromatic amino acids. Neg. correlation between the levels of aromatic amino acids and phenols in roots suggests that glyphosate exercises its primary action via activation of phenylalanine ammonia lyase.

IT 56-84-8, Aspartic acid, biological studies
RL: BIOL (Biological study)
(of oat, **glyphosate** effect on)

L6 ANSWER 19 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1989:548741 HCAPLUS

DOCUMENT NUMBER: 111:148741

TITLE: Effect of cations of divalent metals on glyphosate uptake, transport and efficiency in plants

AUTHOR(S): Dolinskaya, L. V.; Makeev, A. M.; Chkanikov, D. I.

CORPORATE SOURCE: Vses. Nauchno-Issled. Inst. Fitopatol., USSR

SOURCE: Fiziologiya i Biokhimiya Kul'turnykh Rastenii (1989), 21(1), 70-5
CODEN: FBKRAT; ISSN: 0532-9310

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB Interference of metals in water used for making tank solns. with glyphosate (I) activity was studied by mixing 1M ¹⁴C-labeled I with 2M Ca, Zn, or Fe sulfates. I (5 µg) in these mixts. was applied to the apical part of a pea leaf. Within 24 h, penetration of ¹⁴C from I alone or plus Ca, Zn, or Fe was 47.6, 38.2, 37.5, and 71.4%, resp. For 48 h the resp. values were 51.1, 37.4, 58.9, and 86.1%. Within 24 h penetration of ¹⁴C beyond the treated leaf was 25.8, 19.8, 4.2, and 8.6%, resp. For 48 h the resp. values were 34.2, 25.9, 7.4, and 7.0%. Fresh weight of aerial parts of treated plants was 50.2, 61.6, 93.8, and 105.4% of untreated controls, resp. Chelation of Fe and Zn with NaEDTA alleviated their interference with I activity. In presence of NaEDTA, I + Zn on Fe decreased the plant weight to 61.9 and 61.6%, resp. Potentiometric titration demonstrated that I produces rather stable complexes with Zn²⁺ and Fe²⁺ and an unstable one with Ca²⁺. The use of I in combination with Zn²⁺ or Fe²⁺ sharply weakened the **herbicide** outflow into the untreated plant parts and considerably decreased its phytotoxicity, whereas Ca²⁺ being present in the solution exerted a relatively slight effect on the transport of the **herbicide** and its physiol. activity. A decrease in I phytotoxicity in the presence of cations of certain divalent-metals is a result of formation of rather stable low-mobile complexes.

IT 7379-28-4

RL: BIOL (Biological study)
(**glyphosate** activity interference by iron and zinc alleviation by)

L6 ANSWER 20 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1988:200140 HCAPLUS
DOCUMENT NUMBER: 108:200140
TITLE: Glyphosphate-tolerance in *Catharanthus roseus*
AUTHOR(S): Cresswell, R. C.; Fowler, M. W.; Scragg, A. H.
CORPORATE SOURCE: Wolfson Inst. Biotechnol., Univ. Sheffield, Sheffield, S10 2TN, UK
SOURCE: Plant Science (Shannon, Ireland) (1988), 54(1), 55-63
CODEN: PLSCE4; ISSN: 0168-9452
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Cultured cells of *C. roseus* were selected by a stepwise procedure for tolerance to the **herbicide** glyphosate. The selected cells were found to contain levels of extractable 5-enolpyruvylshikimic acid 3-phosphate (EPSP) synthase activity significantly greater than those found in nonselected cells. EPSP synthases from glyphosate-tolerant and nonselected cells were both inhibited by glyphosate. The glyphosate-tolerant cells accumulated less shikimic acid and/or shikimic acid-3-phosphate when treated with glyphosate-tolerant *C. roseus*. Treatment of nonselected cells with aromatic amino acid supplements reversed, partially, the effects of 1 mM glyphosate but did not prevent, markedly, growth inhibition caused by 10 mM glyphosate. Production of the secondary metabolites ajmalicine and serpentine, originating from tryptophan, by the selected and nonselected cells was low.

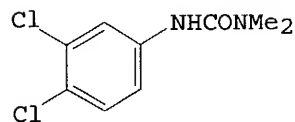
IT 56-84-8, biological studies

RL: BIOL (Biological study)
(of **glyphosate**-tolerant *Catharanthus roseus* cells)

L6 ANSWER 21 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1985:591140 HCAPLUS
DOCUMENT NUMBER: 103:191140
TITLE: The effects of five widely used pesticides on erythrocytes of the Dorset sheep, an animal model with low erythrocyte glucose-6-phosphate dehydrogenase (G-6-PD) activity
AUTHOR(S): Geiger, Christopher P.; Calabrese, Edward J.
CORPORATE SOURCE: Div. Public Health, Univ. Massachusetts, Amherst, MA,

SOURCE: 01003, USA
Journal of Environmental Science and Health, Part A:
Environmental Science and Engineering (1985), A20(5),
521-7
CODEN: JESEDU; ISSN: 0360-1226
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



AB The in vitro effects of 5 widely employed pesticides (i.e., insecticides: malathion [121-75-5] and aldicarb [116-06-3]; herbicides: diuron (I) [330-54-1], metolachlor [51218-45-2], and glyphosate [1071-83-6]) were studied on the occurrence of oxidative stress [i.e., increased levels of methHb and decreased levels of induced glutathione (GSH) [70-18-8] in erythrocytes from female Dorset sheep, an animal model with low erythrocyte G-6-PD activity]. The only significant treatments occurred with malathion and metolachlor which reduced GSH levels at the highest concentration (i.e., 100 ppm) employed by 59 and 45%, resp.

L6 ANSWER 22 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1985:501959 HCAPLUS
DOCUMENT NUMBER: 103:101959
TITLE: Reversal of glyphosate-induced growth inhibition of Candida maltosa by several amino acids and pyruvate
AUTHOR(S): Bode, R.; Kunze, G.; Birnbaum, D.
CORPORATE SOURCE: Sekt. Biol., Ernst-Moritz-Arndt-Univ., Greifswald, DDR-2200, Ger. Dem. Rep.
SOURCE: Biochemie und Physiologie der Pflanzen (1985), 180(8), 613-19
CODEN: BPPFA4; ISSN: 0015-3796
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The broad-spectrum herbicide glyphosate inhibits the growth of C. maltosa and causes the excretion of shikimic acid. In addition to the aromatic amino acids, a number of other amino acids (glutamic and aspartic acid, glutamine, asparagine, arginine, serine, leucine, valine, lysine) were particularly effective in reversing glyphosate inhibition. If organic acids were added to the medium, a good reversal of glyphosate-induced effects only could be obtained with pyruvate. The effective reversing compds. for glyphosate inhibition can reduce uptake of the herbicide by the yeast cell. Based on investigations of permeation, it was proposed that C. maltosa possesses a general amino acid permease which is able to catalyze the transport of several amino acids and probably of glyphosate. Since the reversal agents share a common site of permease, an inhibition of glyphosate uptake is induced.

IT 56-84-8, biological studies 97-67-6 110-15-6,
biological studies 328-42-7
RL: BIOL (Biological study)
(glyphosate inhibition of Candida maltosa reversal by)

L6 ANSWER 23 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1985:466753 HCAPLUS
DOCUMENT NUMBER: 103:66753

TITLE: Pesticidal effect on soybean-rhizobia symbiosis
 AUTHOR(S): Mallik, M. A. B.; Tesfai, K.
 CORPORATE SOURCE: Agric. Res. Cent., Langston Univ., Langston, OK,
 73050, USA
 SOURCE: Plant and Soil (1985), 85(1), 33-41
 CODEN: PLSOA2; ISSN: 0032-079X

DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Relative compatibility of selected pesticides at 2 levels of application (recommended rate and 5 + or 10 +) with soybean-rhizobia symbiosis was tested in pot culture expts. using a prepared peat inoculant. PCNB [82-68-8], carboxin [5234-68-4] and carboxin-captan mixture [58660-12-1] at recommended level were innocuous to growth, nodulation, N2 fixation and total N content of shoot. Carboxin and carboxin + captan but not PCNB at 10 times recommended level were detrimental to nodulation and N2 fixation. Carbaryl [63-25-2] and malathion [121-75-5] at recommended level had no adverse effect but at 10 times recommended level severely reduced N2 fixation but not other parameters. Acephate [30560-19-1], diazinon [333-41-5] and toxaphene [8001-35-2] at both levels reduced N2 fixation and total N content but not growth and nodulation. All 5 herbicides used at recommended and 5 times recommended level adversely affected nodulation and N2 fixation. **Glyphosate** [1071-83-6] was least toxic to all parameters, 2,4-DB [94-82-6] at recommended level was less harmful to nodulation and N2 fixation than trifluralin [1582-09-8], alachlor [15972-60-8] and metribuzin [21087-64-9].

L6 ANSWER 24 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1985:41480 HCAPLUS
 DOCUMENT NUMBER: 102:41480
 TITLE: Selection and characterization of a carrot cell line tolerant to glyphosate
 AUTHOR(S): Nafziger, Emerson D.; Widholm, Jack M.; Steinruecken, Hans C.; Killmer, John L.
 CORPORATE SOURCE: Dep. Agron., Univ. Illinois, Urbana, IL, 61801, USA
 SOURCE: Plant Physiology (1984), 76(3), 571-4
 CODEN: PLPHAY; ISSN: 0032-0889

DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Cultured carrot (Daucus carota) cells were adapted to growing in 25 mM glyphosate [1071-83-6] by transfer into progressively higher concns. of the herbicide. Tolerance was increased 52-fold, and the adaptation was stable in the absence of glyphosate. The uptake of glyphosate was similar for adapted and nonadapted cells. Activity of 5-enolpyruvylshikimic acid-3-phosphate synthase [9068-73-9] was 12-fold higher in the adapted line compared to nonadapted cells, while activities of shikimate dehydrogenase [9026-87-3] and anthranilate synthase [9031-59-8] were similar in the 2 cell types. The adapted cells had higher levels of free amino acids, especially threonine [72-19-5], methionine [63-68-3], tyrosine [60-18-4], phenylalanine [63-91-2], tryptophan [73-22-3], histidine [71-00-1], and arginine [74-79-3], than did nonadapted cells. Glyphosate treatment caused decreases of 50 to 65% in the levels of serine [56-45-1], glycine [56-40-6], methionine, tyrosine, phenylalanine, and tryptophan in nonadapted cells, but caused little change in free amino acid levels in adapted cells. Apparently, tolerance to glyphosate could be linked with increased levels of 5-enolpyruvylshikimic acid-3-phosphate synthase. The elevated levels of aromatic amino acids, which may confer resistance in adapted cells, suggest that control of the shikimate pathway may be altered in these cells.

IT 56-84-8, biological studies

RL: BIOL (Biological study)

(of carrot, **glyphosate** effect on, tolerance in relation to)

L6 ANSWER 25 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1982:540091 HCAPLUS
 DOCUMENT NUMBER: 97:140091
 TITLE: New **herbicides**
 AUTHOR(S): Fadeeva, T. A.
 CORPORATE SOURCE: USSR
 SOURCE: Zemledelie (1982), (6), 50-3
 CODEN: ZMLDAH; ISSN: 0044-3913
 DOCUMENT TYPE: Journal; General Review
 LANGUAGE: Russian

AB A review without refs. considering Illoxan [51338-27-3], lontrel [1702-17-6], Nitosorg (Raindys) [38641-94-0], Suffix BW [52756-22-6], Barnon [52756-22-6], Kafpon [121-75-5], and C7-9 esters of 2,4-D.

L6 ANSWER 26 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1982:99367 HCAPLUS
 DOCUMENT NUMBER: 96:99367
 TITLE: Integrated management of phytophagous mites in Massachusetts (U.S.A.) apple orchards. 2. Influence of pesticides on the predator *Amblyseius fallacis* (Acarina: Phytoseiidae) under laboratory and field conditions
 AUTHOR(S): Hislop, Robert G.; Prokopy, Ronald J.
 CORPORATE SOURCE: Dep. Entomol., Univ. Massachusetts, Amherst, MA, 01003, USA
 SOURCE: Protection Ecology (1981), 3(2), 157-72
 CODEN: PECLD3; ISSN: 0378-4339
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Forty orchard spray materials were evaluated in laboratory and (or) field trials for toxicity to different strains of *A. fallacis*, predators of the spider mites *Panonychus ulmi* and *Tetranychus urticae*. In laboratory trials, materials highly toxic to the Bishop strain were methomyl [16752-77-5], carbaryl [63-25-2], phosalone [2310-17-0], diazinon [333-41-5], demeton [8065-48-3], dimethoate [60-51-5], fenvalerate [51630-58-1], permethrin [52645-53-1], formetanate hydrochloride [23422-53-9], ammonium sulfamate, paraquat [4685-14-7], and **glyphosate** [1071-83-6]. Materials of moderate toxicity were phosphamidon [13171-21-6], dicofol [115-32-2], karathane [39300-45-3], cyhexatin [13121-70-5], and daminozide [1596-84-5]. Materials of low toxicity were malathion [121-75-5], phosmet [732-11-6], azinphosmethyl [86-50-0], methyl parathion [298-00-0], etc. benomyl [17804-35-2] Leaf residues interfered with reproductive capacity. In field trials, phosalone, permethrin, and benomyl reduced the numerical response of *A. fallacis* to prey increase, resulting in spider mite build-up. endosulfan [115-29-7], Azinphosmethyl, phosmet, and methyl parathion had little effect on *A. fallacis* abundance, resulting in predator-prey ratios favorable to biol. control of spider mites. In com. orchards receiving combinations of phosalone, formetanate hydrochloride, ammonium sulfamate, benomyl, and (or) glyodin [556-22-9], *A. fallacis* was unable to respond maximally to increasing spider mite abundance, necessitating repeated acaricide treatments. In com. orchards receiving none of these materials, but instead treated with azinophosmethyl, phosmet, endosulfan, captan [133-06-2], and (or) dodine [2439-10-3], spider mites rarely exceeded the economic injury level, owing in large part to the more favorable *A. fallacis*-spider mite ratios.

L6 ANSWER 27 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1982:64116 HCAPLUS
 DOCUMENT NUMBER: 96:64116

TITLE: Reversal of glyphosate inhibition of carrot cell culture growth by glycolytic intermediates and organic and amino acids

AUTHOR(S): Killmer, John; Widholm, Jack; Slife, Fred

CORPORATE SOURCE: Dep. Agron., Univ. Illinois, Urbana, IL, 61801, USA

SOURCE: Plant Physiology (1981), 68(6), 1299-302
CODEN: PLPHAY; ISSN: 0032-0889

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Various cytokinins and purines were ineffective in reversing **glyphosate** [1071-83-6] (0.25 mM)-induced growth inhibition of carrot (*Daucus carota*) cell suspension cultures. aspartate [56-84-8] Was particularly effective in reversing **glyphosate** inhibition, but asparagine and various combinations of lysine, methionine, threonine, and homoserine (eventual products of aspartate metabolism) were not effective. When organic acids of the tricarboxylic acid cycle were added to the medium, particularly good reversal of inhibition could be obtained with α -ketoglutarate [328-50-7], succinate [110-15-6], and malate [6915-15-7]. citrate [77-92-9] Provided only moderate reversal, but the reversal given by glutamate [56-86-0] was comparable to that of aspartate and the more effective tricarboxylic acid cycle intermediates. pyruvate [127-17-3] Was somewhat toxic to cells when added early in the cell cycle, but was most effective at reversing **glyphosate** inhibition when added at this time. If pyruvate addition was delayed, it was less toxic but was also a less effective reversing agent for **glyphosate** inhibition. All of the effective reversing agents for **glyphosate** inhibition found in this study can serve either directly or indirectly as C skeletons for respiration and NH₃ assimilation and have previously been shown to be effective detoxifying agents for NH₃ in cell culture systems. Results suggest that **glyphosate** inhibition of growth in this system may be due to depletion of respiratory substrate which may eventually result in NH₃ accumulation.

IT 56-84-8, biological studies 110-15-6, biological studies 6915-15-7

RL: BIOL (Biological study)
(**glyphosate** inhibition of carrot cell growth reversal by)

L6 ANSWER 28 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1981:492210 HCAPLUS

DOCUMENT NUMBER: 95:92210

TITLE: Effects of pesticides on 1,3- β -glucanase and urease activities in soil in the presence and absence of fertilizers, lime and organic materials

AUTHOR(S): Lethbridge, Gordon; Bull, Alan T.; Burns, Richard G.

CORPORATE SOURCE: Biol. Lab., Univ. Kent, Canterbury, CT2 7NJ, UK

SOURCE: Pesticide Science (1981), 12(2), 147-55
CODEN: PSSCBG; ISSN: 0031-613X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The effect of 4 **herbicides** and one insecticide on 1,3- β -glucanase (I) [9044-93-3] and urease [9002-13-5] activities in soil was studied in the laboratory. Concns. equivalent to 5+ the recommended field application rates of the pesticides, applied as their formulations, had no effect on the activity of either enzyme, under a variety of incubation conditions, which included various moisture regimes and soil treatments. The soil enzyme systems could only be disrupted by very high dosage rates. Thus, I was enhanced by 2,4-D [94-75-7], inhibited by di-allate [2303-16-4], benzoylprop ethyl [22212-55-1], and malathion [121-75-5], but unaffected by **glyphosate** [1071-83-6], whereas urease activity was inhibited by 2,4-D but unaffected by di-allate, benzoylprop Et, and **glyphosate**.

L6 ANSWER 29 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1981:42354 HCAPLUS
 DOCUMENT NUMBER: 94:42354
 TITLE: Inhibition of succinate-linked reduction of pyridine nucleotide in rat liver mitochondria 'in vivo' by N-(phosphonomethyl)glycine
 AUTHOR(S): Olorunsogo, Olufunso O.; Bababunmi, Enitan A.
 CORPORATE SOURCE: Biomembrane Res. Sect., Univ. Ibadan, Ibadan, Nigeria
 SOURCE: Toxicology Letters (1980), 7(2), 149-52
 CODEN: TOLED5; ISSN: 0378-4274
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The pattern of the interaction of N-(phosphonomethyl)glycine (PMG) [1071-83-6], a broad-spectrum and nonselective **herbicide** with succinate [110-15-6]-linked reduction of pyridine nucleotide, was investigated in liver mitochondria isolated 5 h after albino rats were given i.p. injections of PMG. Although there was no appreciable inhibition of the reduction of pyridine nucleotide at <150 mg PMG/kg, the extent of inhibition increased as the dose was raised to 240 mg PMG/kg. Maximal inhibition of 34.5 and 45.4% were obtained at 240 mg PMG/kg when externally added ATP and high-energy intermediate, resp., were used as the source of energy. Thus, the inhibitory effect of PMG may be due to its uncoupling effect on oxidative phosphorylation.

L6 ANSWER 30 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1978:558688 HCAPLUS
 DOCUMENT NUMBER: 89:158688
 TITLE: Complexing agents as **herbicide** additives
 AUTHOR(S): Turner, D. J.; Loader, M. P. C.
 CORPORATE SOURCE: Weed Res. Organ., ARC, Yarnton/Oxford, UK
 SOURCE: Weed Research (1978), 18(4), 199-207
 CODEN: WEREAT; ISSN: 0043-1737
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB In pot expts. with Agropyron repens, Stellaria media and dwarf bean (Phaseolus vulgaris), several acids which are complexing agents enhanced the effects of **glyphosate** [1071-83-6] and dichlorprop [120-36-5]. Both **herbicides** were activated by H3PO4, citric acid [77-92-9], tartaric acid [87-69-4], lactic acid [50-21-5], oxalic acid [144-62-7] and glycolic acid [79-14-1]. Other acids which are not complexing agents had little or no effect. Na or ammonium salts often acted like the parent acids. **Glyphosate** activity was increased by EDTA [60-00-4] while dichlorprop effects were enhanced by EDTA, nitrilotriacetic acid [139-13-9] and polyphosphates. Activation was due to interactions with Ca or other metallic ions, which would otherwise immobilize the **herbicides**. In field expts., H3PO4 or oxalic acid increased the effects of **glyphosate** on Agropyron bud viability. (NH4)2SO4 had a similar effect. However, in contrast to glasshouse expts., most 3-way mixts. of an acid, (NH4)2SO4 and **glyphosate** were antagonistic.

L6 ANSWER 31 OF 31 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1978:70407 HCAPLUS
 DOCUMENT NUMBER: 88:70407
 TITLE: Effects of glyphosate on the amino acid content in spring wheat plants
 AUTHOR(S): Nilsson, Gunnar
 CORPORATE SOURCE: Dep. Plant Physiol., Uppsala, Swed.
 SOURCE: Swedish Journal of Agricultural Research (1977), 7(3), 153-7
 CODEN: SJARB9; ISSN: 0049-2701

DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Spring wheat plants were grown in a nutrient solution and sprayed with 0.1% or 0.01% Roundup (**glyphosate**) (I) [1071-83-6]. The total and free amino acids were determined in leaves and roots sep. Treatment with I diminished the total amount of all amino acids except aspartic acid [56-84-8] and glutamic acid [56-86-0]. The total amount of NH₃ increased after treatment with I. The free amino acids increased considerably, especially aspartic acid, asparagine [70-47-3], and glutamic acid [56-86-0]. Free NH₃ also increased. The percentage of tyrosine [60-18-4] and phenylalanine [63-91-2] was strongly reduced. The relative amts. of the total content of the various amino acids were affected mainly in the same way in leaves and roots, while the effect on most of the free acids was more pronounced in the leaves. Effects on non-protein amino acids were also observed. Transamination reactions were affected by the **herbicide** and senescing processes were enhanced.

IT 56-84-8, biological studies
 RL: BIOL (Biological study)
 (of wheat, **glyphosate** effect on)

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 (577-11-7/RN)
 1 110-15-6/BI
 (110-15-6/RN)
 1 6915-15-7/BI

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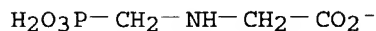
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        INDEX NAME)
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CN      Sulfonium, trimethyl-, salt with N-(phosphonomethyl)glycine (1:1) (9CI)
OTHER NAMES:
CN      Avans 330
CN      Glyphosate mono(trimethylsulfonium) salt
CN      Glyphosate trimethylsulfonium salt
CN      Glyphosate-trimesium
CN      ICIA 0224
CN      Medallon
CN      N-Phosphonomethylglycine monotrimethylsulfonium salt
CN      Ouragan
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CN      Sulfosate
CN      Touchdown
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RL.P    Roles from patents:  BIOL (Biological study); PREP (Preparation); PROC
        (Process); USES (Uses)
RLD.P   Roles for non-specific derivatives from patents:  BIOL (Biological
        study); PRP (Properties); USES (Uses)
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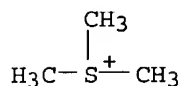
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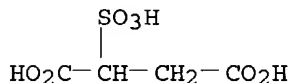


260 REFERENCES IN FILE CA (1907 TO DATE)
45 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
260 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 140:298908
REFERENCE 2: 140:199329
REFERENCE 3: 140:159049
REFERENCE 4: 140:159047
REFERENCE 5: 140:124047
REFERENCE 6: 140:89300
REFERENCE 7: 140:72560
REFERENCE 8: 140:787
REFERENCE 9: 139:392480
REFERENCE 10: 139:376651

L7 ANSWER 2 OF 12 REGISTRY COPYRIGHT 2004 ACS on STN
RN 29454-16-8 REGISTRY
CN Butanedioic acid, sulfo-, monosodium salt (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Succinic acid, sulfo-, monosodium salt (8CI)
OTHER NAMES:
CN Sodium sulfosuccinate
CN Sulfosuccinic acid monosodium salt
MF C4 H6 O7 S . Na
CI COM
LC STN Files: AGRICOLA, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CAPLUS, CASREACT, CHEMLIST, CIN, IFICDB, IFIPAT, IFIUDB, PROMT, TOXCENTER, TULSA, USPATFULL
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Other Sources: EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA Caplus document type: Conference; Journal; Patent
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); RACT

(Reactant or reagent); USES (Uses)
 RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); PREP (Preparation); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
 RL.NP Roles from non-patents: PREP (Preparation); PROC (Process); PRP (Properties); USES (Uses)
 RLD.NP Roles for non-specific derivatives from non-patents: PROC (Process); PRP (Properties)
 CRN (5138-18-1)



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53 REFERENCES IN FILE CA (1907 TO DATE)
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 53 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 140:165562
 REFERENCE 2: 140:8442
 REFERENCE 3: 139:382948
 REFERENCE 4: 139:231063
 REFERENCE 5: 138:403286
 REFERENCE 6: 138:369918
 REFERENCE 7: 138:276254
 REFERENCE 8: 138:273346
 REFERENCE 9: 138:194950
 REFERENCE 10: 137:248348

L7 ANSWER 3 OF 12 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 7379-28-4 REGISTRY
 CN Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-, sodium salt (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Acetic acid, (ethylenedinitrilo)tetra-, sodium salt (8CI)
 OTHER NAMES:
 CN Calmosine
 CN Ethylenediaminetetraacetic acid sodium salt
 CN Rexene
 CN Sodium ethylenediamine disuccinic acid salt
 CN Sodium salt of ethylenediaminetetraacetic acid
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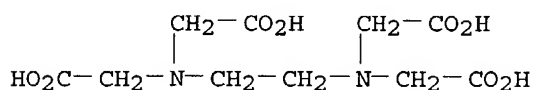
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(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA Caplus document type: Conference; Dissertation; Journal; Patent; Report
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.P Roles for non-specific derivatives from patents: OCCU (Occurrence); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); MSC (Miscellaneous); OCCU (Occurrence); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
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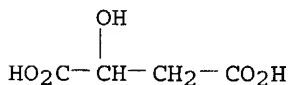
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1279 REFERENCES IN FILE CA (1907 TO DATE)
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 1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 140:425886
 REFERENCE 2: 140:313281
 REFERENCE 3: 140:50337
 REFERENCE 4: 139:120937
 REFERENCE 5: 139:57928
 REFERENCE 6: 139:44274
 REFERENCE 7: 138:355982
 REFERENCE 8: 138:325283
 REFERENCE 9: 138:175528
 REFERENCE 10: 138:146328

L7 ANSWER 4 OF 12 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 6915-15-7 REGISTRY
 CN Butanedioic acid, hydroxy- (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Malic acid (8CI)
 OTHER NAMES:
 CN (±)-Malic acid
 CN α-Hydroxysuccinic acid
 CN 2-Hydroxybutanedioic acid
 CN 2-Hydroxyethane-1,2-dicarboxylic acid

CN 2-Hydroxysuccinic acid
 CN Deoxytetraric acid
 CN dl-Malic acid
 CN DL-Malic acid
 CN E 296
 CN FDA 2018
 CN Hydroxybutanedioic acid
 CN Hydroxysuccinic acid
 CN Musashi-no-Ringoson
 CN NSC 25941
 CN Pomalut Acid
 CN R,S(±)-Malic acid
 FS 3D CONCORD
 DR 623158-98-5, 617-48-1, 41308-42-3
 MF C4 H6 O5
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, PS, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, USAN, USPAT2, USPATFULL, VETU, VTB
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 DT.CA CAPLUS document type: Book; Conference; Dissertation; Journal; Patent; Report
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

18053 REFERENCES IN FILE CA (1907 TO DATE)
 730 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 18081 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 141:31083
 REFERENCE 2: 141:28754

REFERENCE 3: 141:28686
 REFERENCE 4: 141:28647
 REFERENCE 5: 141:28646
 REFERENCE 6: 141:28214
 REFERENCE 7: 141:27375
 REFERENCE 8: 141:27231
 REFERENCE 9: 141:27213
 REFERENCE 10: 141:26982

L7 ANSWER 5 OF 12 REGISTRY COPYRIGHT 2004 ACS on STN

RN 5138-18-1 REGISTRY

CN Butanedioic acid, sulfo- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Succinic acid, sulfo- (6CI, 7CI, 8CI)

OTHER NAMES:

CN 2-Sulfosuccinic acid

CN Sulfosuccinic acid

FS 3D CONCORD

DR 55904-24-0, 181719-29-9

MF C4 H6 O7 S

CI COM

LC STN Files: BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DRUGU, EMBASE, GMELIN*, IFICDB, IFIPAT, IFIUDB, MEDLINE, PROMT, TOXCENTER, USPAT2, .USPATFULL

(*File contains numerically searchable property data)

Other Sources: EINECS**, NDSL**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

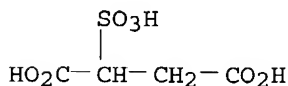
DT.CA CAPLUS document type: Conference; Dissertation; Journal; Patent; Report

RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1310 REFERENCES IN FILE CA (1907 TO DATE)

999 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1311 REFERENCES IN FILE CAPLUS (1907 TO DATE)
3 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 140:429021
REFERENCE 2: 140:428681
REFERENCE 3: 140:428670
REFERENCE 4: 140:362998
REFERENCE 5: 140:341003
REFERENCE 6: 140:324936
REFERENCE 7: 140:323066
REFERENCE 8: 140:309488
REFERENCE 9: 140:305809
REFERENCE 10: 140:305539

L7 ANSWER 6 OF 12 REGISTRY COPYRIGHT 2004 ACS on STN

RN 1071-83-6 REGISTRY

CN Glycine, N-(phosphonomethyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:

CN (Carboxymethylamino)methylphosphonic acid

CN Accord

CN Carboxymethylaminomethanephosphinic acid

CN Folusen

CN Forsat

CN Glialka

CN Glialka 36

CN Gliz

CN Gliz 480CS

CN Glyfos

CN Glyphodin A

CN Glyphomax

CN Glyphosate

CN Glyphosate CT

CN Herbatop

CN Hockey

CN Kickdown

CN Lancer

CN MON 2139

CN MON 6000

CN N-Phosphomethylglycine

CN N-Phosphonomethylglycine

CN NSC 151063

CN Phorsat

CN Phosphonomethylglycine

CN Phosphonomethyliminoacetic acid

CN Rebel Garden

FS 3D CONCORD

DR 37337-60-3, 75241-08-6, 42618-09-7

MF C3 H8 N O5 P

CI COM

LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS,
BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN,
CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DRUGU,

EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*,
MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, ULIDAT,
USPAT2, USPATFULL

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**

(**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA CAPLUS document type: Book; Conference; Dissertation; Journal; Patent;
Report
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study);
MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC
(Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses);
NORL (No role in record)
RLD.P Roles for non-specific derivatives from patents: ANST (Analytical
study); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation);
PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES
(Uses)
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological
study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU
(Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT
(Reactant or reagent); USES (Uses)
RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical
study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC
(Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process);
PRP (Properties); RACT (Reactant or reagent); USES (Uses)

HO₂C-CH₂-NH-CH₂-PO₃H₂

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

4753 REFERENCES IN FILE CA (1907 TO DATE)
287 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
4760 REFERENCES IN FILE CAPLUS (1907 TO DATE)
2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:28023
REFERENCE 2: 141:20525
REFERENCE 3: 141:20522
REFERENCE 4: 141:19529
REFERENCE 5: 141:4249
REFERENCE 6: 141:4193
REFERENCE 7: 141:2855
REFERENCE 8: 141:2806
REFERENCE 9: 141:2801
REFERENCE 10: 141:2660

L7 ANSWER 7 OF 12 REGISTRY COPYRIGHT 2004 ACS on STN
RN 577-11-7 REGISTRY
CN Butanedioic acid, sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (9CI)
(CA INDEX NAME)
OTHER CA INDEX NAMES:

CN Aerosol OT-B (6CI)
 OTHER NAMES:
 CN 1,4-Bis(2-ethylhexyl) sodium sulfosuccinate
 CN Adekacol EC 8600
 CN Aerosol A 501
 CN Aerosol AOT
 CN Aerosol GPG
 CN Aerosol OT
 CN Aerosol OT 100
 CN Aerosol OT 70PG
 CN Aerosol OT 75
 CN Aerosol OT 75PG
 CN Aerosol OT 94
 CN Aerosol OT-A
 CN Aerosol OT-S
 CN Airrol CT 1
 CN Airrol CT 1L
 CN Airrol OP
 CN Alcopol O
 CN Alkasurf SS-O 75
 CN Alphasol OT
 CN AOT
 CN AOT 100
 CN AOT I
 CN Astrowet 608
 CN Astrowet O 70PG
 CN Astrowet O 75
 CN B 80
 CN Berol 478
 CN Bis(2-ethylhexyl) S-sodium sulfosuccinate
 CN Bis(2-ethylhexyl) sodiosulfosuccinate
 CN Bis(2-ethylhexyl) sodium sulfosuccinate
 CN Bis(2-ethylhexyl) sulfosuccinate sodium salt
 CN Carabon DA 72
 CN Celanol DOS 65
 CN Celanol DOS 75
 CN Colace
 CN Comfolax
 CN Complemix
 CN Constonate
 CN Coprol
 CN Coprola
 CN Correctol Stool Softener Laxative
 CN Defilin
 CN DESS
 CN Di(2-ethylhexyl) sulfosuccinate sodium salt
 CN Di-2-ethylhexyl sodium sulfosuccinate
 CN Dialose
 CN Dioctlyn
 CN Dioctyl
 CN Dioctyl sodium sulfosuccinate
 ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for
 DISPLAY
 DR 59030-04-5, 60202-21-3, 130390-93-1, 66812-62-2, 105956-73-8, 106396-28-5,
 113255-61-1, 51910-13-5, 135843-72-0, 67924-68-9, 138893-51-3, 76689-26-4,
 75418-10-9, 78207-03-1, 52624-44-9, 53023-94-2, 110162-65-7, 201816-76-4,
 202352-75-8, 209453-97-4
 MF C20 H38 O7 S . Na
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS,
 BIOSIS, BIOTECHNO, CA, CABA, CAOLD, CAPLUS, CASREACT, CEN, CHEMCATS,
 CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES,

DRUGU, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IMSCOSEARCH, IPA, MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, PROUSDDR, PS, RTECS*, TOXCENTER, USAN, USPAT2, USPATFULL, VETU

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**, WHO

(**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA CAplus document type: Conference; Dissertation; Journal; Patent; Preprint; Report

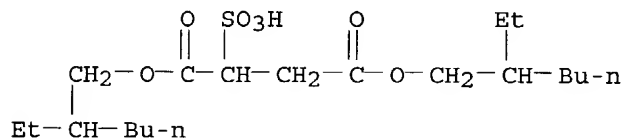
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

CRN (10041-19-7)



● Na

7281 REFERENCES IN FILE CA (1907 TO DATE)

39 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

7291 REFERENCES IN FILE CAPLUS (1907 TO DATE)

16 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:32644

REFERENCE 2: 141:31102

REFERENCE 3: 141:29160

REFERENCE 4: 141:28693

REFERENCE 5: 141:28635

REFERENCE 6: 141:25349

REFERENCE 7: 141:24910

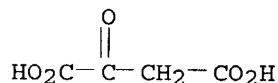
REFERENCE 8: 141:24908

REFERENCE 9: 141:24650

REFERENCE 10: 141:22613

L7 ANSWER 8 OF 12 REGISTRY COPYRIGHT 2004 ACS on STN

RN 328-42-7 REGISTRY
 CN Butanedioic acid, oxo- (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Oxalacetic acid (8CI)
 OTHER NAMES:
 CN α -Ketosuccinic acid
 CN 2-Ketosuccinic acid
 CN 2-Oxobutanedioic acid
 CN 2-Oxosuccinic acid
 CN Ketosuccinic acid
 CN NSC 284205
 CN NSC 77688
 CN OAA
 CN Oxaloacetic acid
 CN Oxaloethanoic acid
 CN Oxosuccinic acid
 FS 3D CONCORD
 MF C4 H4 O5
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CAOLD, CAPLUS, CASREACT, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DRUGU, EMBASE, HODOC*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, SPECINFO, TOXCENTER, USPAT2, USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 DT.CA Caplus document type: Conference; Dissertation; Journal; Patent; Report
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); PROC (Process); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); PROC (Process); PRP (Properties)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

3753 REFERENCES IN FILE CA (1907 TO DATE)
 42 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 3755 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 8 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:22389

REFERENCE 2: 141:20781

REFERENCE 3: 141:4578

REFERENCE 4: 140:419819
 REFERENCE 5: 140:403418
 REFERENCE 6: 140:402582
 REFERENCE 7: 140:395605
 REFERENCE 8: 140:389656
 REFERENCE 9: 140:380283
 REFERENCE 10: 140:371203

L7 ANSWER 9 OF 12 REGISTRY COPYRIGHT 2004 ACS on STN

RN 110-15-6 REGISTRY

CN Butanedioic acid (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Succinic acid (8CI)

OTHER NAMES:

CN 1,2-Ethanedicarboxylic acid

CN 1,4-Butanedioic acid

CN A 12084

CN Amber acid

CN Asuccin

CN Dihydrofumaric acid

CN Katasuccin

CN NSC 106449

CN NSC 25949

CN Wormwood acid

FS 3D CONCORD

DR 623158-99-6

MF C4 H6 O4

CI COM

LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VETU, VTB

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA Caplus document type: Book; Conference; Dissertation; Journal; Patent; Preprint; Report

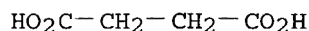
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC

(Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process);
PRP (Properties); RACT (Reactant or reagent); USES (Uses)



****PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT****

23884 REFERENCES IN FILE CA (1907 TO DATE)
2241 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
23910 REFERENCES IN FILE CAPLUS (1907 TO DATE)
9 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:33090
REFERENCE 2: 141:33084
REFERENCE 3: 141:30163
REFERENCE 4: 141:28647
REFERENCE 5: 141:28646
REFERENCE 6: 141:28610
REFERENCE 7: 141:27375
REFERENCE 8: 141:26965
REFERENCE 9: 141:26683
REFERENCE 10: 141:25221

L7 ANSWER 10 OF 12 REGISTRY COPYRIGHT 2004 ACS on STN

RN 97-67-6 REGISTRY

CN Butanedioic acid, hydroxy-, (2S)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Butanedioic acid, hydroxy-, (S)-

CN Malic acid, l- (3CI)

CN Malic acid, L- (8CI)

OTHER NAMES:

CN (-)-(S)-Malic acid

CN (-)-Hydroxysuccinic acid

CN (-)-L-Malic acid

CN (-)-Malic acid

CN (2S)-2-Hydroxybutanedioic acid

CN (S)-Malic acid

CN Apple acid

CN L-(-)-Malic acid

CN L-Malic acid

CN NSC 9232

CN S-(-)-Malic acid

CN S-2-Hydroxybutanedioic acid

FS STEREOSEARCH

DR 498-37-3, 124501-05-9, 84781-39-5, 6294-10-6

MF C4 H6 O5

CI COM

LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS,
CA, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST,
CIN, CSCHEM, DETHERM*, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB,

IPA, MRCK*, NAPRALERT, PIRA, PROMT, PS, SPECINFO, SYNTHLINE, TOXCENTER, USPAT2, USPATFULL

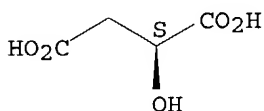
(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA Caplus document type: Conference; Dissertation; Journal; Patent; Report
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study);
 FORM (Formation, nonpreparative); PREP (Preparation); PROC (Process);
 PRP (Properties); RACT (Reactant or reagent); USES (Uses)
 RLD.P Roles for non-specific derivatives from patents: ANST (Analytical
 study); BIOL (Biological study); PREP (Preparation); PROC (Process);
 USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological
 study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU
 (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT
 (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical
 study); BIOL (Biological study); FORM (Formation, nonpreparative); PREP
 (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or
 reagent); USES (Uses)

Absolute stereochemistry. Rotation (-).



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2246 REFERENCES IN FILE CA (1907 TO DATE)
 38 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 2248 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:24017
 REFERENCE 2: 141:23414
 REFERENCE 3: 141:22259
 REFERENCE 4: 141:19467
 REFERENCE 5: 140:422734
 REFERENCE 6: 140:406978
 REFERENCE 7: 140:406411
 REFERENCE 8: 140:402582
 REFERENCE 9: 140:391579
 REFERENCE 10: 140:390475

L7 ANSWER 11 OF 12 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 87-69-4 REGISTRY
 CN Butanedioic acid, 2,3-dihydroxy- (2R,3R)- (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Butanedioic acid, 2,3-dihydroxy- [R-(R*,R*)]-

CN Tartaric acid, L-(+)- (8CI)

OTHER NAMES:

CN (+)-(R,R)-Tartaric acid
 CN (+)-L-Tartaric acid
 CN (+)-Tartaric acid
 CN (2R,3R)-(+)-Tartaric acid
 CN (2R,3R)-Tartaric acid
 CN (R,R)-(+)-Tartaric acid
 CN (R,R)-Tartaric acid
 CN 1,2-Dihydroxyethane-1,2-dicarboxylic acid
 CN 2,3-Dihydroxybutanedioic acid
 CN 2R,3R-Tartaric acid
 CN d- α,β -Dihydroxysuccinic acid
 CN d-Tartaric acid
 CN Dextrotartaric acid
 CN Dihydroxysuccinic acid
 CN E 334
 CN L-(+)-Tartaric acid
 CN L-Tartaric acid
 CN Natural tartaric acid
 CN NSC 62778
 CN Tartaric acid
 CN Threarcic acid
 FS STEREOSEARCH
 DR 8014-54-8, 8059-77-6, 1336-18-1
 MF C4 H6 O6
 CI COM

LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHM, DDFU, DETHERM*, DIOGENES, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, PS, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, USAN, USPAT2, USPATFULL

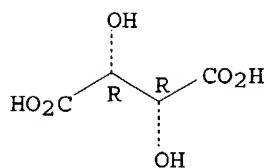
(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA Caplus document type: Book; Conference; Dissertation; Journal; Patent; Report
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

17284 REFERENCES IN FILE CA (1907 TO DATE)
 1359 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 17316 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:30163
 REFERENCE 2: 141:28703
 REFERENCE 3: 141:28665
 REFERENCE 4: 141:28647
 REFERENCE 5: 141:28646
 REFERENCE 6: 141:28267
 REFERENCE 7: 141:27375
 REFERENCE 8: 141:27286
 REFERENCE 9: 141:26982
 REFERENCE 10: 141:26965

L7 ANSWER 12 OF 12 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 56-84-8 REGISTRY
 CN L-Aspartic acid (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Aspartic acid, L- (8CI)
 OTHER NAMES:
 CN (+)-Aspartic acid
 CN (S)-Aminobutanedioic acid
 CN (S)-Aspartic acid
 CN Asparagic acid
 CN Asparaginic acid
 CN Aspartic acid
 CN Butanedioic acid, amino-, (S)-
 CN H-Asp-OH
 CN L-(+)-Aspartic acid
 CN L-Aminosuccinic acid
 CN L-Asparagic acid
 CN L-Asparaginic acid
 CN NSC 3973
 CN NSC 79553
 FS STEREOSEARCH
 DR 6899-03-2, 181119-33-5
 MF C4 H7 N O4
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS,

BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHM, CSNB, DDFU, DETHERM*, DIOGENES, DRUGU, EMBASE, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, PS, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VTB

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**, WHO

(**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA CAplus document type: Book; Conference; Dissertation; Journal; Patent; Report

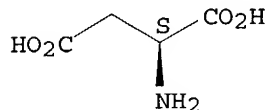
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

Absolute stereochemistry. Rotation (+).



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

36666 REFERENCES IN FILE CA (1907 TO DATE)
 1100 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 36733 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 3 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:33065

REFERENCE 2: 141:33053

REFERENCE 3: 141:33052

REFERENCE 4: 141:28665

REFERENCE 5: 141:28342

REFERENCE 6: 141:23872

REFERENCE 7: 141:22949

REFERENCE 8: 141:22847

REFERENCE 9: 141:22820

REFERENCE 10: 141:22783

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=> fil hcaplus

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FILE COVERS 1907 - 8 Jul 2004 VOL 141 ISS 2

FILE LAST UPDATED: 7 Jul 2004 (20040707/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

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L2      8512 SEA FILE=REGISTRY ABB=ON  PLU=ON  SUCCINIC(W)ACID
L3      6167 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L1 OR ?GLUFOSINAT?(2A)?AMMONIU
        ? OR ?GLYPHOSAT?
L4      180633 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L2 OR SUCCINIC?(W)ACID?
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L6      31 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L5 AND ?HERBICID?
L8      5993 SEA FILE=REGISTRY ABB=ON  PLU=ON  SUCCINAT?
L9      97421 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L8 OR ?SUCCINAT?
L10     28 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L3 (L) L9
L11     20 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L10 AND ?HERBICID?
L12     5 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L11 NOT L6
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=> d ibib abs hitrn l12 1-5

L12 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:396604 HCAPLUS

DOCUMENT NUMBER: 135:1671

TITLE: Surfactant adjuvants for herbicide compositions

INVENTOR(S): Stridde, Howard Meyer; Kirby, Andrew Francis; Ashrawi, Samir S.; Lewis, David Charles; Elsik, Curtis Michael

PATENT ASSIGNEE(S): Huntsman Petrochemical Corporation, USA
 SOURCE: PCT Int. Appl., 36 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001037661	A1	20010531	WO 2000-US32129	20001122
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1237410	A1	20020911	EP 2000-978866	20001122
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
BR 2000015923	A	20030624	BR 2000-15923	20001122
US 2003032558	A1	20030213	US 2002-175535	20020618
PRIORITY APPLN. INFO.:			US 1999-166933P	P 19991122
			WO 2000-US32129	W 20001122

OTHER SOURCE(S): MARPAT 135:1671

AB The surfactant adjuvant comprises an amine-based surfactant, and a **sulfosuccinate** or sulfosuccinamate-based surfactant (preparation given). The surfactant adjuvant combines the known surfactancy, or wetting characteristics, of **sulfosuccinate**- or sulfosuccinamate-based surfactants, with the proven bioefficacy of alkoxylated amine-based surfactants. Compns. comprise a **herbicide**, such as **glyphosate**, a surfactant adjuvant of the invention, and optionally, one or more formulation aids. The **herbicide** compns. of the invention are expected to have a reduced tendency to cause eye and skin irritation.

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2000:264106 HCAPLUS

DOCUMENT NUMBER: 133:70130

TITLE: Arabidopsisthaliana in culture: a powerful tool to decipher the mode of action/target sites of **herbicides** with antimetabolite activity

AUTHOR(S): Subramanian, M. V.; Walters, E. W.; Lyzwanski, O.; Siehl, D. L.

CORPORATE SOURCE: Novartis Crop Protection, Palo Alto, CA, 94304, USA
 SOURCE: Current Plant Science and Biotechnology in Agriculture (1999), 36(Plant Biotechnology and In Vitro Biology in the 21st Century), 553-556
 CODEN: CPBAE2; ISSN: 0924-1949

PUBLISHER: Kluwer Academic Publishers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A. thaliana in culture is a powerful tool to determine the mode of action of **herbicides** with antimetabolite activity. The culture media can be manipulated to identify various biosynthetic pathways blocked by probe compds. For example, inhibition of Arabidopsis in culture caused by 4 stds., viz., asulam, **glyphosate**, sulcotrione, and

pyrithiobac-sodium (PTB) were specifically reversed by PABA, aromatic amino acids, homogentisic acid and branched chain amino acids, resp. These stds. are known inhibitors of 7,8-dihydropteroate synthase (DPT synthase, in the folic acid biosynthesis pathway), 5-enolpyruvylshikimate-3-phosphate synthase (EPSP synthase, in the shikimate pathway), p-hydroxyphenylpyruvate dioxygenase (HPPD, in the plastoquinone biosynthesis pathway) and acetolactate synthase (ALS, in the pathway for branched chain amino acids), resp. This technique was used to investigate two compds. with previously unknown modes of action. Inhibition of Arabidopsis growth by hydantocidin (Hy), and 6-methylantranilate (MA), was specifically reversed by adenosine-5'-monophosphate (AMP, for Hy), and anthranilate or tryptophan (for MA). Hy was thus suspected to block purine biosynthesis, while MA was proposed to block the biosynthesis of tryptophan. Follow-up studies revealed that Hy and MA are **proherbicides**. The **herbicidal** forms were identified as hydantocidin-5'-phosphate (HP) and 4-methyltryptophan (4MT), resp. Target sites for HP and 4MT were found to be **adenylosuccinate** synthetase (ADSS) in the purine biosynthesis pathway and anthranilate synthase (AS) in the tryptophan biosynthesis pathway. Observations made with Hy were also confirmed with a known inhibitor of ADSS, hadacidin (Ha). ADSS was inhibited competitively by both Ha and HP, but with respect to aspartate and inosine-5'-monophosphate (IMP), resp. HP was found to be about two orders of magnitude more potent an inhibitor than Ha. Further, HP was co-crystallized with ADSS complexed to its substrates. Anal. of the crystal structure should help in the design of new inhibitors as possible **herbicides**.

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2000:74759 HCAPLUS
DOCUMENT NUMBER: 132:94982
TITLE: Butanedioic acid derivative for use as surfactant
INVENTOR(S): Anderson, S. J.; Carpenter, N. M.
PATENT ASSIGNEE(S): Imperial Chemical Industries PLC, UK
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 30 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1169714	A	19980107	CN 1995-196573	19951129
CN 1072642	B	20011010		
IL 116182	A1	20001031	IL 1995-116182	19951128
CA 2205867	AA	19960606	CA 1995-2205867	19951129
			GB 1994-24353	A 19941202

PRIORITY APPLN. INFO.:

OTHER SOURCE(S): MARPAT 132:94982

AB The derivative has a structure R1H(R3R4NOC)C-C(COR5)HR2 wherein one of R1 and R2 = C6-12 alkyl or alkenyl, another = H, R3 = multihydroxy-alkyl, R4 = H or C1-22 alkyl, R5 = -NR3R4 or -O(AO)nR6, AO = alkenyloxy, n = 1-200, R6 = H, C1-22 alkyl, R1H(R3R4NOC)C-C(HR2)COO, amino, pyrrolidinyl, piperidin-1-yl, piperazinyl, morpholinyl, or N-(C1-6 alkyl)piperazinyl. Thus, 50 g methanol and 200 g dodecenylsuccinic anhydride were reacted to give di-Me **dodecenylsuccinate**, 100 g of which was reacted with 119 g N-methylglucamine to give dodecenylsuccinic bis(N-methylglucamide), 80 g/L of which was mixed with 180 g/L **glyphosate** isopropylamine salt and 90 g/L propylene glycol to form a **herbicide**, showing weeds control 100% in 28 days.

L12 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1982:137520 HCAPLUS
 DOCUMENT NUMBER: 96:137520
 TITLE: Inhibition of energy-dependent transhydrogenase reaction by N-(phosphonomethyl)glycine in isolated rat liver mitochondria
 AUTHOR(S): Olorunsogo, Olufunso O.
 CORPORATE SOURCE: Biochem. Dep., Univ. Ibadan, Ibadan, Nigeria
 SOURCE: Toxicology Letters (1982), 10(1), 91-5
 CODEN: TOLED5; ISSN: 0378-4274
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Lower concns. of N-phosphonomethyl glycine (PMG) [1071-83-6] ($<1.50 \cdot 10^{-4}M$) had no significant effect (12% inhibition) on the activity of transhydrogenase [9072-60-0] in isolated rat liver mitochondria when the reaction was supported by energy generated from **succinate** oxidation. Inhibition increased as the concentration of the **herbicide** was raised: at $3.12 \cdot 10^{-4}M$ the degree was 28% and at $1.25 \cdot 10^{-3}M$ PMG, 46% (maximal inhibition). Similar results were obtained when ATP was used as the source of energy. These observations indicate that like thyroxine, an uncoupler of oxidative phosphorylation, PMG interacts with both oxidative phosphorylation and energy-dependent transhydrogenase reaction.

L12 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1981:133129 HCAPLUS
 DOCUMENT NUMBER: 94:133129
 TITLE: Inhibition of energy-dependent, phosphate-induced swelling of isolated rat liver mitochondria by N-(phosphonomethyl)glycine
 AUTHOR(S): Olorunsogo, Olufunso O.; Bababunmi, Enitan A.; Bassir, Olumbi
 CORPORATE SOURCE: Dep. Biochem., Univ. Ibadan, Ibadan, Nigeria
 SOURCE: Natural Sciences (1979), 1(3), 113-17
 CODEN: NASIDO; ISSN: 0253-830X
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Spectrophotometric measurements at 520 nm using isolated rat liver mitochondria metabolizing **succinate**, a 2-site substrate, revealed significant inhibition of energy-dependent, phosphate-induced swelling of the organelle at certain concns. (≤ 5 mM) of N-(phosphonomethyl)glycine isopropylamine salt (PMG isopropylamine salt) [38641-94-0], a broad-spectrum, postemergence, and nonselective **herbicide**. Maximal inhibition of mitochondrial swelling (apprx.70%) was obtained at a concentration of 1.25 mM PMG. Similar results were obtained when mitochondria were metabolizing 3-hydroxybutrate, a 3-site substrate. In this instance, maximal inhibition of swelling (71%) was recorded at 1.25 mM PMG. Like 2,4-dinitrophenol, a classical uncoupler of oxidative phosphorylation, N-(phosphonomethyl)glycine prevented energy-dependent, phosphate-induced swelling of mitochondria.

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 NO E#s ASSIGNED

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L1 1431 SEA FILE=REGISTRY ABB=ON PLU=ON GLUFOSINAT?(L)AMMONIU? OR

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      GLYPHOSAT?
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      ? OR ?GLYPHOSAT?
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L6      31 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L5 AND ?HERBICID?
L8      5993 SEA FILE=REGISTRY ABB=ON  PLU=ON  SUCCINAT?
L9      97421 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L8 OR ?SUCCINAT?
L10     28 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L3(L)L9
L11     20 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L10 AND ?HERBICID?
L12     5 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L11 NOT L6
L13     47 SEA FILE=REGISTRY ABB=ON  PLU=ON  DIMETHYL SUCCINATE?/CN OR
      CALCIUM SUCCINATE?/CN OR MAGNESIUM SUCCINATE?/CN OR DIAMMONIUM
      SUCCINATE?/CN OR AMMONIUM SUCCINATE?/CN
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L16     4575 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L15 OR (DIMETHYL OR CALCIUM
      OR MAGNESIUM OR DIAMMONIUM OR AMMONIUM)(W)SUCCINATE?
L18     1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L16 AND L3
L19     1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L18 NOT (L5 OR L12)

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=> d ibib abs hitrn l19 1

L19 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1992:464582 HCAPLUS

DOCUMENT NUMBER: 117:64582

TITLE: Salmonella mutagenicity tests: V. Results from the testing of 311 chemicals

AUTHOR(S): Zeiger, Errol; Anderson, Beth; Haworth, Steve; Lawlor, Timothy; Mortelmans, Kristien

CORPORATE SOURCE: Exp. Carcinog. Mutagen. Branch, Natl. Inst. Environ. Health Sci., Research Triangle Park, NC, USA

SOURCE: Environmental and Molecular Mutagenesis (1992), 19(Suppl. 21), 2-141
CODEN: EMMUEG; ISSN: 0893-6692

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Three hundred eleven chems. were tested under code, for mutagenicity, in *S. typhimurium*; 35 of the chems. were tested more than once in the same or different labs. The tests were conducted using a preincubation protocol in the absence of exogenous metabolic activation, and in the presence of liver S-9 from Aroclor-induced male Sprague-Dawley rats and Syrian hamsters. Some of the volatile chems. were also tested in desiccators. A total of 120 chems. were mutagenic or weakly mutagenic, 3 were judged questionable, and 172 were nonmutagenic. The remaining 16 chems. produced different responses in the two or three labs. in which they were tested. The results and data from these tests are presented.

IT 106-65-0, Dimethylsuccinate 1071-83-6,

Glyphosate

RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(mutagenicity of, testing of)

=> select hit rn l19 1

E1 THROUGH E2 ASSIGNED

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STRUCTURE FILE UPDATES: 7 JUL 2004 HIGHEST RN 705925-25-3
 DICTIONARY FILE UPDATES: 7 JUL 2004 HIGHEST RN 705925-25-3

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004

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 information enter HELP PROP at an arrow prompt in the file or refer
 to the file summary sheet on the web at:
<http://www.cas.org/ONLINE/DBSS/registryss.html>

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=> s e1-e2

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      1 106-65-0/BI
        (106-65-0/RN)
      1 1071-83-6/BI
        (1071-83-6/RN)
L20      2 (106-65-0/BI OR 1071-83-6/BI)
  
```

=> d ide can l20 1-2

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L20  ANSWER 1 OF 2  REGISTRY  COPYRIGHT 2004 ACS on STN
RN   1071-83-6  REGISTRY
CN   Glycine, N-(phosphonomethyl)- (7CI, 8CI, 9CI)  (CA INDEX NAME)
OTHER NAMES:
CN   (Carboxymethylamino)methylphosphonic acid
CN   Accord
CN   Carboxymethylaminomethanephosphinic acid
CN   Folusen
CN   Forsat
CN   Glialka
CN   Glialka 36
CN   Gliz
CN   Gliz 480CS
CN   Glyfos
CN   Glyphodin A
CN   Glyphomax
CN   Glyphosate
CN   Glyphosate CT
CN   Herbatop
CN   Hockey
CN   Kickdown
CN   Lancer
CN   MON 2139
CN   MON 6000
  
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CN N-Phosphomethylglycine
 CN N-Phosphonomethylglycine
 CN NSC 151063
 CN Phorsat
 CN Phosphonomethylglycine
 CN Phosphonomethyliminoacetic acid
 CN Rebel Garden
 FS 3D CONCORD
 DR 37337-60-3, 75241-08-6, 42618-09-7
 MF C3 H8 N O5 P
 CI COM
 LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DRUGU, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, ULIDAT, USPAT2, USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 DT.CA Caplus document type: Book; Conference; Dissertation; Journal; Patent; Report
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)



****PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT****

4753 REFERENCES IN FILE CA (1907 TO DATE)
 287 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 4760 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:28023
 REFERENCE 2: 141:20525
 REFERENCE 3: 141:20522
 REFERENCE 4: 141:19529
 REFERENCE 5: 141:4249
 REFERENCE 6: 141:4193

REFERENCE 7: 141:2855

REFERENCE 8: 141:2806

REFERENCE 9: 141:2801

REFERENCE 10: 141:2660

L20 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2004 ACS on STN

RN 106-65-0 REGISTRY

CN Butanedioic acid, dimethyl ester (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Succinic acid, dimethyl ester (6CI, 8CI)

OTHER NAMES:

CN DBE 4

CN Dimethyl butanedioate

CN Dimethyl succinate

CN Methyl succinate

CN NSC 52209

FS 3D CONCORD

MF C6 H10 O4

CI COM

LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIPPR*, DRUGU, EMBASE, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, USPAT2, USPATFULL, VTB

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

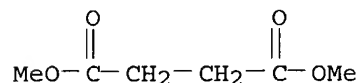
DT.CA Caplus document type: Conference; Journal; Patent; Report

RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); PREP (Preparation); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); PRP (Properties); USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1367 REFERENCES IN FILE CA (1907 TO DATE)

40 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

1368 REFERENCES IN FILE CAPLUS (1907 TO DATE)

44 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:8898

REFERENCE 2: 141:8288
 REFERENCE 3: 141:8203
 REFERENCE 4: 140:425904
 REFERENCE 5: 140:394908
 REFERENCE 6: 140:391301
 REFERENCE 7: 140:374892
 REFERENCE 8: 140:370246
 REFERENCE 9: 140:368648
 REFERENCE 10: 140:360092

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 FILE LAST UPDATED: 7 Jul 2004 (20040707/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

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L1	1431	SEA	FILE=REGISTRY	ABB=ON	PLU=ON	GLUFOSINAT?(L)AMMONIU? OR GLYPHOSAT?
L2	8512	SEA	FILE=REGISTRY	ABB=ON	PLU=ON	SUCCINIC(W)ACID
L3	6167	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L1 OR ?GLUFOSINAT?(2A)?AMMONIU ? OR ?GLYPHOSAT?
L4	180633	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L2 OR SUCCINIC?(W)ACID?
L5	41	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L3(L)L4
L6	31	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L5 AND ?HERBICID?
L8	5993	SEA	FILE=REGISTRY	ABB=ON	PLU=ON	SUCCINAT?
L9	97421	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L8 OR ?SUCCINAT?
L10	28	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L3(L)L9
L11	20	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L10 AND ?HERBICID?

L12 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L11 NOT L6
 L13 47 SEA FILE=REGISTRY ABB=ON PLU=ON DIMETHYL SUCCINATE?/CN OR
 CALCIUM SUCCINATE?/CN OR MAGNESIUM SUCCINATE?/CN OR DIAMMONIUM
 SUCCINATE?/CN OR AMMONIUM SUCCINATE?/CN
 L14 SEL PLU=ON L13 1- CHEM : 218 TERMS
 L15 4575 SEA FILE=HCAPLUS ABB=ON PLU=ON L14
 L16 4575 SEA FILE=HCAPLUS ABB=ON PLU=ON L15 OR (DIMETHYL OR CALCIUM
 OR MAGNESIUM OR DIAMMONIUM OR AMMONIUM) (W)SUCCINATE?
 L18 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L16 AND L3
 L19 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L18 NOT (L5 OR L12)
 L22 14 SEA FILE=HCAPLUS ABB=ON PLU=ON L3 AND (L4 OR L9 OR L13) AND
 WEED?
 L23 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L22 NOT (L5 OR L12 OR L19)

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=> d ibib abs hitrn l23 1-8

L23 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2003:829592 HCAPLUS
 DOCUMENT NUMBER: 140:334060
 TITLE: Protection of water melon against **weeds**,
 diseases and pests
 AUTHOR(S): Bairambekov, Sh. B.; Valeeva, Z. B.
 CORPORATE SOURCE: Ross. Nauchno-Issled. Inst. Orosshaemogo
 Ovoshchevodstva i Bakhchevodstva, Russia
 SOURCE: Vestnik Rossiiskoi Akademii Sel'skokhozyaistvennykh
 Nauk (2003), (4), 50-51
 CODEN: VRASAW; ISSN: 0869-3730
 PUBLISHER: Rossiiskaya Akademiya Sel'skokhozyaistvennykh Nauk
 DOCUMENT TYPE: Journal
 LANGUAGE: Russian
 AB A complex of agrotech. and agrochem. measures to protect water melon
 cultures from detrimental effects of **weeds**, (fungal) diseases,
 and insects is described. The recommended pesticides include herbicides
 (treflan, nitran, dual, targa, **glyphosate**), fungicides (TMTD,
 colloid S, cumulus), and insecticides (arrivo, decis, carbophos).
 IT 121-75-5, Carbophos 1071-83-6, **Glyphosate**
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
 (agrotech. and agrochem. (herbicide, fungicide, insecticide) protection
 of water melon cultures against **weeds**, diseases and pests)

L23 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2000:227440 HCAPLUS
 DOCUMENT NUMBER: 132:261672
 TITLE: **Weed** growth-inhibiting formulations
 containing nonselective organophosphorus herbicides
 INVENTOR(S): Horibe, Yoshimichi; Amagasa, Tadashi; Sato, Kazuo;
 Aoki, Atsushi
 PATENT ASSIGNEE(S): Sankyo Company, Ltd., Japan
 SOURCE: PCT Int. Appl., 45 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000018236	A1	20000406	WO 1999-JP5174	19990922

W: AU, BR, CA, CN, KR, RU, UA, US

RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
PT, SE

AU 9957577	A1	20000417	AU 1999-57577	19990922
JP 2000159615	A2	20000613	JP 1999-267910	19990922

PRIORITY APPLN. INFO.:		JP 1998-271696	A	19980925
		WO 1999-JP5174	W	19990922

OTHER SOURCE(S): MARPAT 132:261672

AB Agrochem. compns. that can be utilized to control the growth of weeds without killing the plants (e.g. on slopes or ridges) contain a first ingredient selected from the group consisting of glyphosate, etc.; a second ingredient selected from the group consisting of phosphorous acid derivs., etc.; and a third ingredient selected from the group consisting of antioxidants, etc. Thus, glyphosate isopropylamine salt 1000 + calcium propionate 500 + Pr gallate 1000 ppm controlled the height of gramineous weeds such as Setaria viridis and broadleaf weeds (e.g. Ipomoea purpurea).

IT 56-84-8D, Aspartic acid, salts, mixts. with organophosphorus herbicides 87-69-4D, Tartaric acid, salts, mixts. with organophosphorus herbicides, biological studies 97-65-4D, Itaconic acid, salts, mixts. with organophosphorus herbicides 110-15-6D, Succinic acid, salts, mixts. with organophosphorus herbicides 1071-83-6D, Glyphosate, mixts. containing herbicide and its salts 6915-15-7D, Malic acid, salts, mixts. with organophosphorus herbicides
RL: AGR (Agricultural use); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(weed growth-inhibiting formulations containing nonselective organophosphorus herbicides)

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:627964 HCAPLUS

DOCUMENT NUMBER: 125:295221

TITLE: Relevant physical property measurements for adjuvants

AUTHOR(S): Hermansky, Clarence G.; Krause, Gary F.

CORPORATE SOURCE: Dupont Agricultural Products, Experimental Station, Wilmington, DE, 19898-0402, USA

SOURCE: FRI Bulletin (1996), Volume Date 1995, 193(Proceedings of the Fourth International Symposium on Adjuvants for Agrochemicals, 1995), 20-26
CODEN: FRIB EJ; ISSN: 0111-8129

PUBLISHER: New Zealand Forest Research Institute

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Techniques for measuring dynamic surface tension, shear viscosity and extensional viscosity and their relevance to atomization are described. Data for agricultural test substances which span a wide range of phys. properties are illustrated. The development of a statistical phys. property-atomization model, functional under worst case application scenarios, is discussed.

IT 121-75-5, Malathion 38641-94-0, Roundup

RL: PRP (Properties)

(surface tension and viscosity measurements for adjuvants)

L23 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1994:502000 HCAPLUS

DOCUMENT NUMBER: 121:102000

TITLE: Quick-acting herbicidal preparations containing anionic surfactants and weed controlling method using them

INVENTOR(S): Oohayashi, Hisashi; Naito, Norio; Matsumura, Yasuhiro;
 Takahata, Hiroyuki
 PATENT ASSIGNEE(S): Takeda Garden Prod, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06080504	A2	19940322	JP 1992-355527	19921217
PRIORITY APPLN. INFO.:			JP 1992-213383	19920717
AB The title aqueous prepns., which are directly applied to weeds , contain 0.1-20 weight% herbicides and ≥ 0.1 weight% anionic surfactants. Newkalgen EP-4M (Na dialkyl sulfosuccinate) 2.5, defoamer 0.2, DCPA 0.6, isopropanol 10, and H2O 867 parts were mixed to give an aqueous preparation, which showed almost 100% herbicidal activity within 24 h, whereas a control containing polyoxyalkylene arylphneyl ether instead of Newkalgen EP-4M had poor activity.				
IT 1071-83-6, Glyphosate RL: BIOL (Biological study) (aqueous solns., containing anionic surfactants, quick acting)				
IT 577-11-7, Newcol 290M 2373-23-1, Dioctyl sulfosuccinate RL: BIOL (Biological study) (herbicidal aqueous solns. containing, quick acting)				

L23 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1990:402034 HCAPLUS
 DOCUMENT NUMBER: 113:2034
 TITLE: Herbicide formulations and their use
 INVENTOR(S): Dayawon, Miguel Molina; Bohn, Joseph Allen; Striebel, Stephen Michael; Rao, Sudabathula Rajaramamohana; Sandbrink, Joseph Jude; Becher, David Zachary; Petroff, Lenin James; Romenesko, David Joseph; Ekland, Robert Alan; Difate, Victor George
 PATENT ASSIGNEE(S): Monsanto Co., USA
 SOURCE: PCT Int. Appl., 86 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 8912394	A1	19891228	WO 1989-US2570	19890613
W: AU, BB, BG, BR, DK, FI, HU, JP, KR, LK, MC, MG, MW, NO, RO, SD, SU, US				
RW: AT, BE, BF, BJ, CF, CG, CH, CM, DE, FR, GA, GB, IT, LU, ML, MR, NL, SE, SN, TD, TG				
AU 8938389	A1	19900112	AU 1989-38389	19890613
AU 609628	B2	19910502		
BR 8906978	A	19901218	BR 1989-6978	19890613
JP 02504644	T2	19901227	JP 1989-507137	19890613
EP 407473	A1	19910116	EP 1989-907578	19890613
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
HU 55189	A2	19910528	HU 1989-3779	19890613
CN 1052409	A	19910626	CN 1989-109825	19891212
DK 9000376	A	19900409	DK 1990-376	19900213

NO 9000703	A	19900410	NO 1990-703	19900213
PRIORITY APPLN. INFO.:			US 1988-206405	19880614
			WO 1989-US2570	19890613

AB Herbicidal compns. with improved rain-fastness were prepared containing a humectant and a silicone adjuvant. Thus, Roundup (0.5 lb/A) containing 1% Silwet L-77 and 10% glycerin caused 100% control of johnson grass 21 days after treatment; 99% control was obtained under 0.25 in. rainfall. Other herbicidal formulations used contained Blazer (acifluorfen), Scepter (imazaquin), oxyfluorfen and lactofen. The various adjuvants used are reported.

IT 70901-12-1

RL: PROC (Process)
(formulations of, containing silicone surfactants and humectants, rainfastness of)

IT 38641-94-0, Roundup

RL: PROC (Process)
(formulations of, rainfastness of)

IT 3006-15-3, Aerosol MA-80

RL: BIOL (Biological study)
(herbicidal formulations containing, rainfastness of)

L23 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1977:463974 HCAPLUS

DOCUMENT NUMBER: 87:63974

TITLE: **Glyphosate** toxicity to common milkweed and hemp dogbane as influenced by surfactants

AUTHOR(S): Wyrill, J. B., III; Burnside, O. C.

CORPORATE SOURCE: Dep. Agron., Univ. Nebraska, Lincoln, NE, USA

SOURCE: Weed Science (1977), 25(3), 275-87

CODEN: WEESA6; ISSN: 0043-1745

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Surfactants were evaluated in the greenhouse for their ability to enhance **glyphosate** isopropylamine salt [38641-94-0] toxicity to common milkweed (*Asclepias syriaca*) and hemp dogbane (*Apocynum cannabinum*). Ethoxylated amines were among the most effective groups of surfactants. Nonionic ether and ester ethoxylates combined with dimethyl amine or a quaternary ammonium salt were more effective than any of these surfactants alone. Effectiveness of ethoxylated amine surfactants was altered by pH changes. Cationic surfactants tended to be more effective than nonionic surfactants. With exceptions, surfactants were more effective with increased ethoxylation. Amine surfactant effectiveness increased with increasing concns. up to 0.3% . Surfactant effectiveness on a molar basis was more closely related to the ethylene oxide content of the surfactant than was effectiveness on a percentage basis. Contact angle was not related to surfactant effectiveness at high or low surfactant concns. Ethoxylated stearyl ether and amine surfactants gave optimum effectiveness at hydrophile-lipophile balance (HLB) values of 15 to 16 and 19 to 20, resp. Surfactants with a low HLB were usually less effective. Effectiveness of surfactant combinations was quite variable and difficult to predict. Therefore, the indiscriminate addition of surfactants to **glyphosate** spray mixts. which already contain a surfactant should be avoided.

IT 577-11-7

RL: BIOL (Biological study)
(glyphosphate herbicide activity response to)

IT 38641-94-0

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(herbicidal activity of, surfactants enhancement of)

L23 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1976:429455 HCAPLUS
DOCUMENT NUMBER: 85:29455
TITLE: The effect of some plant growth regulators on the sprouting of *Cyperus rotundus* and its response to herbicides
AUTHOR(S): Parker, C.; Dean, M. L.
CORPORATE SOURCE: Agric. Res. Counc., Begbroke Hill/Yarnton/Oxford, UK
SOURCE: Proceedings of the British Weed Control Conference (1972), 11, Vol. 2, 744-51
CODEN: BWCPAI; ISSN: 0571-6144
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Thirty-eight plant growth regulators were tested for their ability to increase sprouting of *Cyperus rotundus* tubers. The cytokinins were very active in promoting extra sprouting, while chlorflurecol-methyl [2536-31-4], naptalam [132-66-1], TIBA [88-82-4] and a few other compds. were active to a lesser degree. Attempts to increase the susceptibility of *C. rotundus* to herbicides by the use of 6-benzylaminopurine (BA) [1214-39-7] and chlorflurecol were generally disappointing but indications of some useful interaction between BA and terbacil [5902-51-2] were observed. Pre-treatment with gibberellin A3 [77-06-5] and gibberellin A4+7 [8030-53-3] caused tubers of *C. rotundus* to produce basal bulbs nearer to the soil surface.
IT 34494-03-6
RL: BIOL (Biological study)
(weed control by, plant hormone stimulation of sprouting in relation to)
IT 1596-84-5
RL: BIOL (Biological study)
(weed sprouting response to)
L23 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1975:509690 HCAPLUS
DOCUMENT NUMBER: 83:109690
TITLE: *Cyperus rotundus*. II. Effects of some herbicides and growth regulators
AUTHOR(S): Hammerton, John L.
CORPORATE SOURCE: Fac. Agric., Univ. West Indies, Kingston, Jamaica
SOURCE: Weed Research (1975), 15(3), 177-83
CODEN: WEREAT; ISSN: 0043-1737
DOCUMENT TYPE: Journal
LANGUAGE: English
GI For diagram(s), see printed CA Issue.
AB Of several herbicides and growth regulators tested only **glyphosate** [1071-83-6], cyperquat (II) [39794-99-5], and monosodium methanearsonate [2163-80-6] killed top growth and appreciably inhibited germination of tubers of nutgrass (*C. rotundus*). None of the growth regulators significantly affected the number of new tubers produced and only 2,4-D diethylamine salt (I) [20940-37-8] decreased the number of shoots per tuber.
IT 1596-84-5
RL: BIOL (Biological study)
(nutgrass response to)
IT 1071-83-6
RL: BIOL (Biological study)
(weed control by, of nutgrass)
=> select hit rn l23 1-8
E3 THROUGH E16 ASSIGNED
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STRUCTURE FILE UPDATES: 7 JUL 2004 HIGHEST RN 705925-25-3
 DICTIONARY FILE UPDATES: 7 JUL 2004 HIGHEST RN 705925-25-3

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004

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<http://www.cas.org/ONLINE/DBSS/registryss.html>

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=> s e3-e16

- 1 1071-83-6/BI
 (1071-83-6/RN)
- 1 38641-94-0/BI
 (38641-94-0/RN)
- 1 121-75-5/BI
 (121-75-5/RN)
- 1 1596-84-5/BI
 (1596-84-5/RN)
- 1 577-11-7/BI
 (577-11-7/RN)
- 1 110-15-6/BI
 (110-15-6/RN)
- 1 2373-23-1/BI
 (2373-23-1/RN)
- 1 3006-15-3/BI
 (3006-15-3/RN)
- 1 34494-03-6/BI
 (34494-03-6/RN)
- 1 56-84-8/BI
 (56-84-8/RN)
- 1 6915-15-7/BI
 (6915-15-7/RN)
- 1 70901-12-1/BI
 (70901-12-1/RN)
- 1 87-69-4/BI
 (87-69-4/RN)
- 1 97-65-4/BI
 (97-65-4/RN)

L24 14 (1071-83-6/BI OR 38641-94-0/BI OR 121-75-5/BI OR 1596-84-5/BI
 OR 577-11-7/BI OR 110-15-6/BI OR 2373-23-1/BI OR 3006-15-3/BI
 OR 34494-03-6/BI OR 56-84-8/BI OR 6915-15-7/BI OR 70901-12-1/BI
 OR 87-69-4/BI OR 97-65-4/BI)

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=> d ide can l24 1-14

L24 ANSWER 1 OF 14 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 70901-12-1 REGISTRY
 CN Glycine, N-(phosphonomethyl)-, potassium salt (9CI) (CA INDEX NAME)
 OTHER NAMES:
 CN N-(Phosphonomethyl)glycine potassium salt
 CN Potassium glyphosate
 MF C3 H8 N O5 P . x K
 CI COM
 LC STN Files: BIOSIS, CA, CAPLUS, CASREACT, IFICDB, IFIPAT, IFIUDB,
 TOXCENTER, USPAT2, USPATFULL
 DT.CA Caplus document type: Journal; Patent
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study);
 PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES
 (Uses)
 RLD.P Roles for non-specific derivatives from patents: BIOL (Biological
 study); USES (Uses)
 RL.NP Roles from non-patents: BIOL (Biological study); OCCU (Occurrence)
 CRN (1071-83-6)



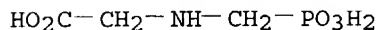
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47 REFERENCES IN FILE CA (1907 TO DATE)
 5 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 47 REFERENCES IN FILE CAPLUS (1907 TO DATE)

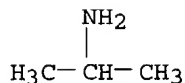
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 REFERENCE 4: 140:159049
 REFERENCE 5: 139:376651
 REFERENCE 6: 139:272373
 REFERENCE 7: 138:380839
 REFERENCE 8: 138:350016
 REFERENCE 9: 138:51349
 REFERENCE 10: 138:34679

L24 ANSWER 2 OF 14 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 38641-94-0 REGISTRY
 CN Glycine, N-(phosphonomethyl)-, compd. with 2-propanamine (1:1) (9CI) (CA
 INDEX NAME)
 OTHER CA INDEX NAMES:

CN 2-Propanamine, compd. with N-(phosphonomethyl)glycine (1:1) (9CI)
 OTHER NAMES:
 CN Azural AT
 CN Buggy
 CN Fosulen
 CN Glyphosate isopropylamine
 CN Glyphosate isopropylamine salt
 CN Glyphosate mono(isopropylamine) salt
 CN MON 0139
 CN MON 39
 CN N-(Phosphonomethyl)glycine isopropylamine salt
 CN N-(Phosphonomethyl)glycine isopropylammonium salt
 CN N-(Phosphonomethyl)glycine monoisopropylamine salt
 CN Nitosorg
 CN Rodeo
 CN Ron-do
 CN Roundup
 CN Roundup Custom
 CN Roundup Ultra
 CN Roundup UltraMax
 CN Utal
 CN Utal (herbicide)
 CN Vision
 CN Vision (herbicide)
 DR 626231-43-4, 96638-41-4, 96639-11-1, 106805-61-2, 39226-77-2, 258263-91-1
 MF C3 H9 N . C3 H8 N O5 P
 CI COM
 LC STN Files: AGRICOLA, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO,
 CA, CABA, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM,
 CSNB, EMBASE, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MRCK*, MSDS-OHS,
 NIOSHTIC, PIRA, PROMT, RTECS*, TOXCENTER, ULIDAT, USPAT2, USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 DT.CA Caplus document type: Conference; Dissertation; Journal; Patent; Report
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study);
 MSC (Miscellaneous); PREP (Preparation); PROC (Process); PRP
 (Properties); RACT (Reactant or reagent); USES (Uses)
 RLD.P Roles for non-specific derivatives from patents: BIOL (Biological
 study); PRP (Properties); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological
 study); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC
 (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
 RLD.NP Roles for non-specific derivatives from non-patents: BIOL (Biological
 study); PREP (Preparation)
 CM 1
 CRN 1071-83-6
 CMF C3 H8 N O5 P



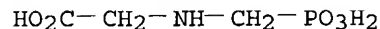
CM 2
 CRN 75-31-0
 CMF C3 H9 N



839 REFERENCES IN FILE CA (1907 TO DATE)
 44 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 840 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 140:401599
 REFERENCE 2: 140:388731
 REFERENCE 3: 140:387285
 REFERENCE 4: 140:351999
 REFERENCE 5: 140:326403
 REFERENCE 6: 140:298908
 REFERENCE 7: 140:252989
 REFERENCE 8: 140:248745
 REFERENCE 9: 140:248740
 REFERENCE 10: 140:248739

L24 ANSWER 3 OF 14 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 34494-03-6 REGISTRY
 CN Glycine, N-(phosphonomethyl)-, monosodium salt (9CI) (CA INDEX NAME)
 OTHER NAMES:
 CN Glyphosate monosodium salt
 CN MON 0459
 CN N-Phosphonomethylglycine monosodium salt
 CN N-Phosphonomethylglycine sodium salt
 MF C3 H8 N O5 P . Na
 CI COM
 LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT, CHEMLIST, IFICDB, IFIPAT,
 IFIUDB, RTECS*, TOXCENTER, USPATFULL
 (*File contains numerically searchable property data)
 DT.CA CAplus document type: Journal; Patent
 RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); PROC
 (Process); RACT (Reactant or reagent); USES (Uses)
 RLD.P Roles for non-specific derivatives from patents: BIOL (Biological
 study); PRP (Properties); USES (Uses)
 RL.NP Roles from non-patents: BIOL (Biological study); USES (Uses)
 CRN (1071-83-6)



● Na

33 REFERENCES IN FILE CA (1907 TO DATE)
 7 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 33 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 140:401765
 REFERENCE 2: 139:96532
 REFERENCE 3: 138:51349
 REFERENCE 4: 136:397312
 REFERENCE 5: 136:258721
 REFERENCE 6: 136:1862
 REFERENCE 7: 134:262326
 REFERENCE 8: 134:218330
 REFERENCE 9: 131:296512
 REFERENCE 10: 131:253672

L24 ANSWER 4 OF 14 REGISTRY COPYRIGHT 2004 ACS on STN

RN 6915-15-7 REGISTRY

CN Butanedioic acid, hydroxy- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Malic acid (8CI)

OTHER NAMES:

CN (+)-Malic acid

CN α -Hydroxysuccinic acid

CN 2-Hydroxybutanedioic acid

CN 2-Hydroxyethane-1,2-dicarboxylic acid

CN 2-Hydroxysuccinic acid

CN Deoxytetraric acid

CN dl-Malic acid

CN DL-Malic acid

CN E 296

CN FDA 2018

CN Hydroxybutanedioic acid

CN Hydroxysuccinic acid

CN Musashi-no-Ringoson

CN NSC 25941

CN Pomalus Acid

CN R,S(+)-Malic acid

FS 3D CONCORD

DR 623158-98-5, 617-48-1, 41308-42-3

MF C4 H6 O5

CI COM

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHM, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, PS, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, USAN, USPAT2, USPATFULL, VETU, VTB

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

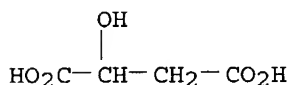
DT.CA Caplus document type: Book; Conference; Dissertation; Journal; Patent; Report

RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)



****PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT****

18053 REFERENCES IN FILE CA (1907 TO DATE)
 730 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 18081 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 141:31083

REFERENCE 2: 141:28754

REFERENCE 3: 141:28686

REFERENCE 4: 141:28647

REFERENCE 5: 141:28646

REFERENCE 6: 141:28214

REFERENCE 7: 141:27375

REFERENCE 8: 141:27231

REFERENCE 9: 141:27213

REFERENCE 10: 141:26982

L24 ANSWER 5 OF 14 REGISTRY COPYRIGHT 2004 ACS on STN

RN 3006-15-3 REGISTRY

CN Butanedioic acid, sulfo-, 1,4-dihexyl ester, sodium salt (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Succinic acid, sulfo-, 1,4-dihexyl ester, sodium salt (8CI)

CN Succinic acid, sulfo-, dihexyl ester, S-sodium salt (7CI)

OTHER NAMES:

CN Di-n-hexyl sulfosuccinate sodium salt

CN Dihexyl ester of sodium sulfosuccinate

CN Dihexyl sodiosulfosuccinate

CN Dihexyl sodium sulfosuccinate

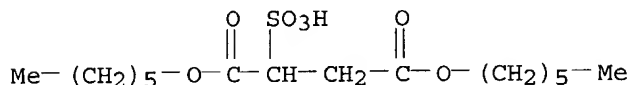
CN Dihexyl sulfosuccinate sodium salt

CN Gemtex 680

CN Monawet MM 80

CN Sodium 1,4-dihexyl sulfonatosuccinate

CN Sodium bis(1-hexyl) sulfosuccinate
 CN Sodium dihexyl sulfosuccinate
 CN Sodium sulfosuccinic acid dihexyl ester
 CN Sulfobutanedioic acid 1,4-dihexyl ester sodium salt
 CN SV 1017
 MF C16 H30 O7 S . Na
 CI COM
 LC STN Files: ANABSTR, BEILSTEIN*, BIOSIS, CA, CAOLD, CAPLUS, CHEMCATS,
 CHEMLIST, CIN, CSCHM, IFICDB, IFIPAT, IFIUDB, MSDS-OHS, RTECS*,
 TOXCENTER, USPAT2, USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 DT.CA CAplus document type: Conference; Journal; Patent; Report
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study);
 OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties);
 RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.P Roles for non-specific derivatives from patents: BIOL (Biological
 study); PROC (Process); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological
 study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU
 (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); USES
 (Uses); NORL (No role in record)
 CRN (23243-42-7)



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324 REFERENCES IN FILE CA (1907 TO DATE)
 3 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 324 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 26 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 140:391878
 REFERENCE 2: 140:326340
 REFERENCE 3: 140:221887
 REFERENCE 4: 140:150441
 REFERENCE 5: 140:130143
 REFERENCE 6: 140:6419
 REFERENCE 7: 139:371952
 REFERENCE 8: 139:371951
 REFERENCE 9: 139:354769
 REFERENCE 10: 139:342154

L24 ANSWER 6 OF 14 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 2373-23-1 REGISTRY

CN Butanedioic acid, sulfo-, 1,4-dioctyl ester (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Succinic acid, sulfo-, 1,4-dioctyl ester (8CI)

CN Succinic acid, sulfo-, dioctyl ester (6CI)

OTHER NAMES:

CN Dioctyl sulfosuccinate

CN Empimin OT

CN Rapisol B 07

FS 3D CONCORD

MF C20 H38 O7 S

CI COM

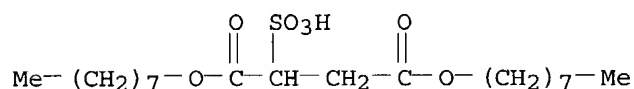
LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS, CHEMLIST, CIN, CSCHEM, DETHERM*, HSDB*, IFICDB, IFIPAT, IFIUIDB, NIOSHTIC, RTECS*, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)

DT.CA CAplus document type: Conference; Dissertation; Journal; Patent

RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

237 REFERENCES IN FILE CA (1907 TO DATE)

15 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

237 REFERENCES IN FILE CAPLUS (1907 TO DATE)

13 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:25349

REFERENCE 2: 140:429021

REFERENCE 3: 140:407890

REFERENCE 4: 140:401752

REFERENCE 5: 140:362998

REFERENCE 6: 140:320320

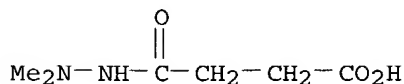
REFERENCE 7: 140:320319

REFERENCE 8: 140:320318

REFERENCE 9: 140:320317

REFERENCE 10: 140:320316

L24 ANSWER 7 OF 14 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 1596-84-5 REGISTRY
 CN Butanedioic acid, mono(2,2-dimethylhydrazide) (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Succinic acid, mono(2,2-dimethylhydrazide) (8CI)
 OTHER NAMES:
 CN Alar
 CN Alar 85
 CN Aminoamid
 CN Aminoamide
 CN B 995
 CN B-Nine
 CN Daminozide
 CN Dazide
 CN Dimas
 CN DIMG
 CN DMASA
 CN DYaK
 CN Kylar
 CN SADH
 CN Succinic acid 2,2-dimethylhydrazide
 CN Succinic acid N,N-dimethylhydrazide
 CN Succinic N',N'-dimethylhydrazide
 FS 3D CONCORD
 DR 1861-26-3, 74913-15-8
 MF C6 H12 N2 O3
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, ACQUIRE, BEILSTEIN*, BIOBUSINESS,
 BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB,
 CEN, CHEMCATS, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*,
 DRUGU, EMBASE, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE,
 MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER,
 TULSA, USPAT2, USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: EINECS**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 DT.CA CAplus document type: Conference; Dissertation; Journal; Patent; Report
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study);
 PREP (Preparation); RACT (Reactant or reagent); USES (Uses); NORL (No
 role in record)
 RLD.P Roles for non-specific derivatives from patents: BIOL (Biological
 study); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological
 study); CMBI (Combinatorial study); FORM (Formation, nonpreparative);
 MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC
 (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses);
 NORL (No role in record)
 RLD.NP Roles for non-specific derivatives from non-patents: CMBI
 (Combinatorial study); FORM (Formation, nonpreparative); PREP
 (Preparation)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1952 REFERENCES IN FILE CA (1907 TO DATE)

8 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1952 REFERENCES IN FILE CAPLUS (1907 TO DATE)
55 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 140:370198
REFERENCE 2: 140:282745
REFERENCE 3: 140:250192
REFERENCE 4: 140:248669
REFERENCE 5: 140:248497
REFERENCE 6: 140:212462
REFERENCE 7: 140:194863
REFERENCE 8: 140:127319
REFERENCE 9: 140:89211
REFERENCE 10: 140:72530

L24 ANSWER 8 OF 14 REGISTRY COPYRIGHT 2004 ACS on STN

RN 1071-83-6 REGISTRY

CN Glycine, N-(phosphonomethyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:

CN (Carboxymethylamino)methylphosphonic acid

CN Accord

CN Carboxymethylaminomethanephosphinic acid

CN Folusen

CN Forsat

CN Glialka

CN Glialka 36

CN Gliz

CN Gliz 480CS

CN Glyfos

CN Glyphodin A

CN Glyphomax

CN Glyphosate

CN Glyphosate CT

CN Herbatop

CN Hockey

CN Kickdown

CN Lancer

CN MON 2139

CN MON 6000

CN N-Phosphomethylglycine

CN N-Phosphonomethylglycine

CN NSC 151063

CN Phorsat

CN Phosphonomethylglycine

CN Phosphonomethyliminoacetic acid

CN Rebel Garden

FS 3D CONCORD

DR 37337-60-3, 75241-08-6, 42618-09-7

MF C3 H8 N O5 P

CI COM

LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS,
BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN,
CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DRUGU,

EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*,
MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, ULIDAT,
USPAT2, USPATFULL

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**

(**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA Caplus document type: Book; Conference; Dissertation; Journal; Patent;
Report
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study);
MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC
(Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses);
NORL (No role in record)
RLD.P Roles for non-specific derivatives from patents: ANST (Analytical
study); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation);
PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES
(Uses)
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological
study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU
(Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT
(Reactant or reagent); USES (Uses)
RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical
study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC
(Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process);
PRP (Properties); RACT (Reactant or reagent); USES (Uses)

HO₂C-CH₂-NH-CH₂-PO₃H₂

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

4753 REFERENCES IN FILE CA (1907 TO DATE)
287 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
4760 REFERENCES IN FILE CAPLUS (1907 TO DATE)
2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:28023
REFERENCE 2: 141:20525
REFERENCE 3: 141:20522
REFERENCE 4: 141:19529
REFERENCE 5: 141:4249
REFERENCE 6: 141:4193
REFERENCE 7: 141:2855
REFERENCE 8: 141:2806
REFERENCE 9: 141:2801
REFERENCE 10: 141:2660

L24 ANSWER 9 OF 14 REGISTRY COPYRIGHT 2004 ACS on STN

RN 577-11-7 REGISTRY

CN Butanedioic acid, sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (9CI)
(CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Aerosol OT-B (6CI)
 OTHER NAMES:
 CN 1,4-Bis(2-ethylhexyl) sodium sulfosuccinate
 CN Adekacol EC 8600
 CN Aerosol A 501
 CN Aerosol AOT
 CN Aerosol GPG
 CN Aerosol OT
 CN Aerosol OT 100
 CN Aerosol OT 70PG
 CN Aerosol OT 75
 CN Aerosol OT 75PG
 CN Aerosol OT 94
 CN Aerosol OT-A
 CN Aerosol OT-S
 CN Airrol CT 1
 CN Airrol CT 1L
 CN Airrol OP
 CN Alcopol O
 CN Alkasurf SS-O 75
 CN Alphasol OT
 CN AOT
 CN AOT 100
 CN AOT I
 CN Astrowet 608
 CN Astrowet O 70PG
 CN Astrowet O 75
 CN B 80
 CN Berol 478
 CN Bis(2-ethylhexyl) S-sodium sulfosuccinate
 CN Bis(2-ethylhexyl) sodiosulfosuccinate
 CN Bis(2-ethylhexyl) sodium sulfosuccinate
 CN Bis(2-ethylhexyl) sulfosuccinate sodium salt
 CN Carabon DA 72
 CN Celanol DOS 65
 CN Celanol DOS 75
 CN Colace
 CN Comfolax
 CN Complemix
 CN Constonate
 CN Coprol
 CN Coprola
 CN Correctol Stool Softener Laxative
 CN Defilin
 CN DESS
 CN Di(2-ethylhexyl) sulfosuccinate sodium salt
 CN Di-2-ethylhexyl sodium sulfosuccinate
 CN Dialose
 CN Dioctlyn
 CN Dioctyl
 CN Dioctyl sodium sulfosuccinate
 ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for
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 DR 59030-04-5, 60202-21-3, 130390-93-1, 66812-62-2, 105956-73-8, 106396-28-5,
 113255-61-1, 51910-13-5, 135843-72-0, 67924-68-9, 138893-51-3, 76689-26-4,
 75418-10-9, 78207-03-1, 52624-44-9, 53023-94-2, 110162-65-7, 201816-76-4,
 202352-75-8, 209453-97-4
 MF C20 H38 O7 S . Na
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS,
 BIOSIS, BIOTECHNO, CA, CABA, CAOLD, CAPLUS, CASREACT, CEN, CHEMCATS,
 CHEMINFORMRX, CHEMLIST, CIN, CSCHM, CSNB, DDFU, DETHERM*, DIOGENES,

DRUGU, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IMSCOSEARCH, IPA, MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, PROUSDDR, PS, RTECS*, TOXCENTER, USAN, USPAT2, USPATFULL, VETU

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**, WHO

(**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA Caplus document type: Conference; Dissertation; Journal; Patent; Preprint; Report

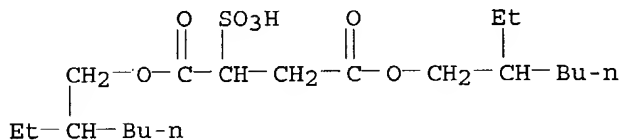
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

CRN (10041-19-7)



● Na

7281 REFERENCES IN FILE CA (1907 TO DATE)
 39 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 7291 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 16 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:32644

REFERENCE 2: 141:31102

REFERENCE 3: 141:29160

REFERENCE 4: 141:28693

REFERENCE 5: 141:28635

REFERENCE 6: 141:25349

REFERENCE 7: 141:24910

REFERENCE 8: 141:24908

REFERENCE 9: 141:24650

REFERENCE 10: 141:22613

L24 ANSWER 10 OF 14 REGISTRY COPYRIGHT 2004 ACS on STN

RN 121-75-5 REGISTRY
 CN Butanedioic acid, [(dimethoxyphosphinothioyl)thio]-, diethyl ester (9CI)
 (CA INDEX NAME)

OTHER NAMES:

CN 8059HC
 CN American Cyanamid 4,049
 CN Carbetovur
 CN Carbetox
 CN Carbofos
 CN Carbophos
 CN Cimexan
 CN Compound 4049
 CN Cythion
 CN Derbac M
 CN Diethyl mercaptosuccinate S-ester with O,O-dimethyl phosphorodithioate
 CN ENT 17,034
 CN ENT 17034
 CN Ethiolacar
 CN Etiol
 CN Extermathion
 CN Forthion
 CN Fosfothion
 CN Fosfotion
 CN Fyfanon
 CN Hilthion
 CN IFO 13140
 CN Insecticide 4049
 CN Insecticide no. 4049
 CN Karbofos
 CN Malafor
 CN Malamar
 CN Malamar 50
 CN Malasol
 CN Malaspray
 CN Malataf
 CN Malathine
 CN Malathion
 CN Malathion E 50
 CN Malathion LV Concentrate
 CN Malathion ULV
 CN Malathyl
 CN Malathyne
 CN Malatol
 CN Malatol 500CE
 CN Maldison
 CN Mavidan
 CN Mercaptothion
 CN Moscarda
 CN NSC 6524
 CN O,O-Dimethyl S-(1,2-dicarbethoxyethyl) dithiophosphate
 CN Oleophosphothion
 CN Organoderm
 CN Ortho Malathion
 CN Ovide

ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for
 DISPLAY

FS 3D CONCORD
 DR 12737-19-8, 12767-62-3, 11096-67-6, 11130-60-2, 141263-96-9, 75513-83-6
 MF C10 H19 O6 P S2
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS,
 BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB,

CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSChem, CSNB, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IMSCoSEARCH, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**

(**Enter CHEMLIST File for up-to-date regulatory information)

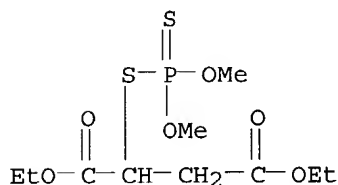
DT.CA CAPLUS document type: Book; Conference; Dissertation; Journal; Patent; Report

RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

10323 REFERENCES IN FILE CA (1907 TO DATE)

58 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

10331 REFERENCES IN FILE CAPLUS (1907 TO DATE)

106 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:33101

REFERENCE 2: 141:28055

REFERENCE 3: 141:27338

REFERENCE 4: 141:19178

REFERENCE 5: 141:19143

REFERENCE 6: 141:18991

REFERENCE 7: 141:18810

REFERENCE 8: 141:11670

REFERENCE 9: 141:11558

REFERENCE 10: 141:11263

L24 ANSWER 11 OF 14 REGISTRY COPYRIGHT 2004 ACS on STN

RN 110-15-6 REGISTRY

CN Butanedioic acid (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Succinic acid (8CI)

OTHER NAMES:

CN 1,2-Ethanedicarboxylic acid

CN 1,4-Butanedioic acid

CN A 12084

CN Amber acid

CN Asuccin

CN Dihydrofumaric acid

CN Katasuccin

CN NSC 106449

CN NSC 25949

CN Wormwood acid

FS 3D CONCORD

DR 623158-99-6

MF C4 H6 O4

CI COM

LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHM, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VETU, VTB

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

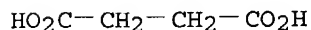
DT.CA Caplus document type: Book; Conference; Dissertation; Journal; Patent; Preprint; Report

RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

23884 REFERENCES IN FILE CA (1907 TO DATE)

2241 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

23910 REFERENCES IN FILE CAPLUS (1907 TO DATE)
9 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:33090
REFERENCE 2: 141:33084
REFERENCE 3: 141:30163
REFERENCE 4: 141:28647
REFERENCE 5: 141:28646
REFERENCE 6: 141:28610
REFERENCE 7: 141:27375
REFERENCE 8: 141:26965
REFERENCE 9: 141:26683
REFERENCE 10: 141:25221

L24 ANSWER 12 OF 14 REGISTRY COPYRIGHT 2004 ACS on STN

RN 97-65-4 REGISTRY

CN Butanedioic acid, methylene- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Succinic acid, methylene- (8CI)

OTHER NAMES:

CN 2-Methylenebutanedioic acid

CN 2-Methylenesuccinic acid

CN 2-Propene-1,2-dicarboxylic acid

CN Itaconic acid

CN Methylenebutanedioic acid

CN Methylenesuccinic acid

CN NSC 3357

CN Propylenedicarboxylic acid

FS 3D CONCORD

MF C5 H6 O4

CI COM

LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHM, DDFU, DETHERM*, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, PDLCOM*, PIRA, PROMT, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL

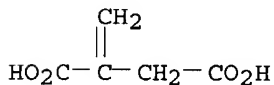
(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA Caplus document type: Conference; Dissertation; Journal; Patent; Report
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT

(Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)



****PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT****

2943 REFERENCES IN FILE CA (1907 TO DATE)
 607 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 2948 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 133 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:24561
 REFERENCE 2: 141:23728
 REFERENCE 3: 140:431319
 REFERENCE 4: 140:423437
 REFERENCE 5: 140:406824
 REFERENCE 6: 140:406737
 REFERENCE 7: 140:391549
 REFERENCE 8: 140:391517
 REFERENCE 9: 140:375527
 REFERENCE 10: 140:359003

L24 ANSWER 13 OF 14 REGISTRY COPYRIGHT 2004 ACS on STN

RN 87-69-4 REGISTRY

CN Butanedioic acid, 2,3-dihydroxy- (2R,3R)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Butanedioic acid, 2,3-dihydroxy- [R-(R*,R*)]-

CN Tartaric acid, L-(+)- (8CI)

OTHER NAMES:

CN (+)-(R,R)-Tartaric acid

CN (+)-L-Tartaric acid

CN (+)-Tartaric acid

CN (2R,3R)-(+)-Tartaric acid

CN (2R,3R)-Tartaric acid

CN (R,R)-(+)-Tartaric acid

CN (R,R)-Tartaric acid

CN 1,2-Dihydroxyethane-1,2-dicarboxylic acid

CN 2,3-Dihydroxybutanedioic acid

CN 2R,3R-Tartaric acid

CN d-α,β-Dihydroxysuccinic acid

CN d-Tartaric acid

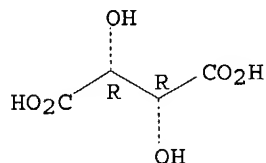
CN Dextrotartaric acid

CN Dihydroxysuccinic acid

CN E 334

CN L-(+)-Tartaric acid
 CN L-Tartaric acid
 CN Natural tartaric acid
 CN NSC 62778
 CN Tartaric acid
 CN Threatic acid
 FS STEREOSEARCH
 DR 8014-54-8, 8059-77-6, 1336-18-1
 MF C4 H6 O6
 CI COM
 LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHM, DDFU, DETHERM*, DIOGENES, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, PS, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, USAN, USPAT2, USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 DT.CA Caplus document type: Book; Conference; Dissertation; Journal; Patent; Report
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

17284 REFERENCES IN FILE CA (1907 TO DATE)
 1359 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 17316 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:30163
 REFERENCE 2: 141:28703
 REFERENCE 3: 141:28665

REFERENCE 4: 141:28647
 REFERENCE 5: 141:28646
 REFERENCE 6: 141:28267
 REFERENCE 7: 141:27375
 REFERENCE 8: 141:27286
 REFERENCE 9: 141:26982
 REFERENCE 10: 141:26965

L24 ANSWER 14 OF 14 REGISTRY COPYRIGHT 2004 ACS on STN

RN 56-84-8 REGISTRY

CN L-Aspartic acid (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Aspartic acid, L- (8CI)

OTHER NAMES:

CN (+)-Aspartic acid

CN (S)-Aminobutanedioic acid

CN (S)-Aspartic acid

CN Asparagic acid

CN Asparaginic acid

CN Aspartic acid

CN Butanedioic acid, amino-, (S)-

CN H-Asp-OH

CN L-(+)-Aspartic acid

CN L-Aminosuccinic acid

CN L-Asparagic acid

CN L-Asparaginic acid

CN NSC 3973

CN NSC 79553

FS STEREOSEARCH

DR 6899-03-2, 181119-33-5

MF C4 H7 N O4

CI COM

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DRUGU, EMBASE, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, PS, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VTB

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**, WHO

(**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA Caplus document type: Book; Conference; Dissertation; Journal; Patent; Report

RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

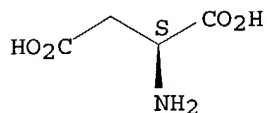
RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative);

MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

Absolute stereochemistry. Rotation (+).



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

36666 REFERENCES IN FILE CA (1907 TO DATE)
1100 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
36733 REFERENCES IN FILE CAPLUS (1907 TO DATE)
3 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:33065
REFERENCE 2: 141:33053
REFERENCE 3: 141:33052
REFERENCE 4: 141:28665
REFERENCE 5: 141:28342
REFERENCE 6: 141:23872
REFERENCE 7: 141:22949
REFERENCE 8: 141:22847
REFERENCE 9: 141:22820
REFERENCE 10: 141:22783

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L1	1431	SEA FILE=REGISTRY ABB=ON	PLU=ON	GLUFOSINAT? (L) AMMONIU? OR GLYPHOSAT?
L2	8512	SEA FILE=REGISTRY ABB=ON	PLU=ON	SUCCINIC (W) ACID
L3	6167	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L1 OR ?GLUFOSINAT? (2A) ?AMMONIU ? OR ?GLYPHOSAT?
L4	180633	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L2 OR SUCCINIC? (W) ACID?
L5	41	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L3 (L) L4
L6	31	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L5 AND ?HERBICID?
L8	5993	SEA FILE=REGISTRY ABB=ON	PLU=ON	SUCCINAT?
L9	97421	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L8 OR ?SUCCINAT?
L10	28	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L3 (L) L9
L11	20	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L10 AND ?HERBICID?
L12	5	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L11 NOT L6
L13	47	SEA FILE=REGISTRY ABB=ON	PLU=ON	DIMETHYL SUCCINATE?/CN OR

CALCIUM SUCCINATE?/CN OR MAGNESIUM SUCCINATE?/CN OR DIAMMONIUM
SUCCINATE?/CN OR AMMONIUM SUCCINATE?/CN

L14 SEL PLU=ON L13 1- CHEM : 218 TERMS

L15 4575 SEA FILE=HCAPLUS ABB=ON PLU=ON L14

L16 4575 SEA FILE=HCAPLUS ABB=ON PLU=ON L15 OR (DIMETHYL OR CALCIUM
OR MAGNESIUM OR DIAMMONIUM OR AMMONIUM) (W) SUCCINATE?

L18 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L16 AND L3

L19 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L18 NOT (L5 OR L12)

L22 14 SEA FILE=HCAPLUS ABB=ON PLU=ON L3 AND (L4 OR L9 OR L13) AND
WEED?

L23 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L22 NOT (L5 OR L12 OR L19)

L31 243 SEA FILE=HCAPLUS ABB=ON PLU=ON L3 AND (L4 OR L9 OR L16)

L32 16 SEA FILE=HCAPLUS ABB=ON PLU=ON L31 AND (?WEED OR ?WEEDS)

L33 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L32 NOT (L5 OR L12 OR L19 OR
L23)

L34 122 SEA FILE=HCAPLUS ABB=ON PLU=ON L31 AND ?HERB?

L35 78 SEA FILE=HCAPLUS ABB=ON PLU=ON L34 NOT (L5 OR L12 OR L19 OR
L23 OR L33)

L36 53 SEA FILE=HCAPLUS ABB=ON PLU=ON L35 AND PD=< OCTOBER 26, 1999

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=> d ibib abs hitrn l36 1-53

L36 ANSWER 1 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:799651 HCAPLUS

DOCUMENT NUMBER: 132:9960

TITLE: The synergistic compounds for agricultural chemicals
and their applications

INVENTOR(S): Hasebe, Keiko; Tomioka, Keiichiro; Suzuki, Tadayuki

PATENT ASSIGNEE(S): Kao Corp., Japan

SOURCE: Faming Zhuanli Shengqing Gongkai Shuomingshu, 63 pp.

CODEN: CNXXEV

DOCUMENT TYPE: Patent

LANGUAGE: Chinese

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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CN 1154060	A	19970709	CN 1995-194294	19950524 <--
CN 1070337	B	20010905		

PRIORITY APPLN. INFO.: JP 1994-121547 A 19940602

AB The mol. formula of synergist I is [R1(CHR4OCHR7)p]N[(CHR8CHR5O)qR2][(CHR9
CHR6O)rR3], where R1, and/or R2, and/or R3 = H, C5-29 alkyl, or alkenyl
etc.; p, and/or q, and/or r = 1-30; R4 = R5 = R6 = R7 = R8 = R9 = H, or Me
or Et. The mol. formula of synergist II is [(CHR18CHR19O)uCOR20]R17N+[(CH
R15CHR12O)sR11][(CHR14CHR13O)tR10]·X-, where R12 = R13 = R14 = R15
= R18 = R19 = H, Me, or ethyl; R20 = H, C5-29 alkyl, or alkenyl etc.; R10
= R11 = H, C5-29 alkyl or alkenyl, -COR14 etc., R17 = H, C1-C4 alkyl or
alkenyl, and benzyl etc. The synergist I and II combining with surfactants
and chelating agent show synergistic effect on fungicide, pesticide,
miticide, **herbicide**, and plant growth regulator, such as Diuron,
Herbiace, Roundup, Osadan, fenitrothion, malathion, and benomyl.

IT 121-75-5, Malathion 38641-94-0, Roundup

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(synergistic compds. for agricultural chems. and their applications)

L36 ANSWER 2 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:429883 HCAPLUS
 DOCUMENT NUMBER: 131:120327
 TITLE: Analysis of runoff water from croplands in the south Texas Coastal Plains
 AUTHOR(S): Eddleman, B. R.; Livingston, C.; Prince, W. B.
 CORPORATE SOURCE: Agricultural Research and Extension Center, Texas A and M University System, Corpus Christi, TX, USA
 SOURCE: Proceedings - Beltwide Cotton Conferences (1999), (Vol. 2), 1295-1298
 CODEN: PCOCEN; ISSN: 1059-2644
 PUBLISHER: National Cotton Council
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB This study assessed water quality components for sediment, nutrients, chemical, organic matter, and other water quality constituents from rainfall and storms producing surface water runoff from croplands comprising the Odem Ranch Watershed within the Corpus Christi Bay National Estuary Program (Texas). Types and amts. of all synthetic herbicides and insecticides, Bt microbial insecticides, defoliants, desiccants, growth regulators, and nutrients applied to crops annually were identified. The database is applicable to predominant Victoria Clay soils in the eastern portion of the study area. Storm event seasonality and soil and topog. and representativeness in this watershed for 70-80% of the cropland acreage indicated results are applicable to a major portion of crop-based agriculture.
 IT 121-75-5, Malathion 1071-83-6, Glyphosate
 RL: POL (Pollutant); OCCU (Occurrence)
 (storm water runoff from croplands pollution of surface waters of coastal plains, southern Texas)

L36 ANSWER 3 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:315503 HCAPLUS
 DOCUMENT NUMBER: 131:87036
 TITLE: Fate of agrochemical residues, associated with malt and hops, during brewing
 AUTHOR(S): Miyake, Y.; Koji, K.; Matsuki, H.; Tajima, R.; Ono, M.
 CORPORATE SOURCE: Research Laboratory for Quality Assurance, Suntory, Ltd., Osaka, 618-8503, Japan
 SOURCE: Journal of the American Society of Brewing Chemists (1999), 57(2), 46-54
 CODEN: JSBCD3; ISSN: 0361-0470
 PUBLISHER: American Society of Brewing Chemists, Inc.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB A process for predicting the potential for persistence of agrochem. residue levels in beer has been developed. For this, anal. methods were first developed for determining the agrochem. residues in beer, wort, and various byproducts during the brewing processes. Second, various types of agrochems. were spiked during the mashing, wort boiling, or fermentation processes and the residues in the product and in the byproduct were determined with the developed method. Agrochems. added were representative of the typical chemical groups of agrochems. for which maximum residual levels in barley or hops are regulated by Japanese law. Third, the potential for the carryover of agrochem. residues into wort and beer was investigated based on chemical properties such as thermostability, chemical reactivity, and oil/water solubility (which was expressed as log Pow values). It was found that the carryover of agrochem. residues into wort and beer depended on their log Pow values. The carryover percentages into wort or beer of glyphosate (organophosphorus herbicide) having the lowest log Pow value were more than 90% of the amount added to each process. On the other hand, most of the agrochems. having a high log Pow value, such as pyrethroid pesticides, were detected in the fractions of the spent

grains and spent hops. Some amts. of the added agrochems. were lost during the wort boiling process. On the other hand, no significant reduction was observed during the fermentation process. None of the agrochems. spiked in the hop pellets were detected in beer because of the loss during boiling and fermentation, though the levels of the spiked agrochems. were high enough to be detected in beer if no loss of the spiked agrochems. had occurred. From these results, the process for predicting the potential for the carryover of agrochem. residues in malt or hops into beer on a laboratory scale was proposed, in that the log Pow values of a agrochem. was effectively used as the primary indicator.

IT 121-75-5, Malathion 1071-83-6, **Glyphosate**

RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); POL (Pollutant); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PROC (Process)

(determination of agrochem. residues in beer and fate of pesticides associated with malt and hops during brewing)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 4 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:72703 HCAPLUS

DOCUMENT NUMBER: 130:149715

TITLE: Paternal exposure to pesticides and congenital malformations

AUTHOR(S): Garcia, Ana M.; Benavides, Fernando G.; Fletcher, Tony; Orts, Enrique

CORPORATE SOURCE: Dep. Preventive Medicine Public Health, Univ. Valencia, Valencia, E-46022, Spain

SOURCE: Scandinavian Journal of Work, Environment & Health (1998), 24(6), 473-480

CODEN: SWEHDO; ISSN: 0355-3140

PUBLISHER: Scandinavian Journal of Work, Environment and Health

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The relationship was investigated between occupational paternal exposure to pesticides in agriculture and congenital malformations based on interviews and an experts assessment of exposure. The results concerning paternal exposure are presented. An increased risk of congenital malformations for paternal exposure was shown for pyridil derivs. and for glufosinate.

IT 121-75-5, Malathion 1071-83-6, **Glyphosate**

RL: ADV (Adverse effect, including toxicity); BIOL (Biological study) (paternal exposure to pesticides and congenital malformations)

REFERENCE COUNT: 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 5 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1998:789240 HCAPLUS

DOCUMENT NUMBER: 130:48703

TITLE: Selective herbicidal compositions

INVENTOR(S): Nevill, David J.

PATENT ASSIGNEE(S): Novartis A.-G., Switz.

SOURCE: Ger. Offen., 394 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19834627	A1	19981203	DE 1998-19834627	19980731 <--

PRIORITY APPLN. INFO.: DE 1998-19834627 19980731
 AB The title compns. are made of mixts. of group I and group II
herbicides. Group I comprises pretilachlor, cinosulfuron,
 triasulfuron, etc. Group II comprises bensulfuron, imzasulfuron,
 pyrazosulfuron, etc.
 IT 304-55-2D, mixts. containing 1071-83-6D, mixts. containing
 81591-81-3D, mixts. containing
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
 (selective **herbicidal** compns.)

L36 ANSWER 6 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1998:160918 HCAPLUS
 DOCUMENT NUMBER: 128:254084
 TITLE: Polyglycerin monoester agents for enhancing
 effectiveness of agrochemicals and agrochemical
 compositions
 INVENTOR(S): Endo, Toshio
 PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10067602	A2	19980310	JP 1996-241123	19960823 <--

PRIORITY APPLN. INFO.: JP 1996-241123 19960823

AB Agents that enhance the effectiveness of agrochems. comprise polyglycerin
 fatty acid esters with a content of monoester RCO[OCH₂CH(OH)CH₂]_nOH (R =
 C₆-21 alkyl, alkenyl, hydroxyalkyl; n ≥ 4) of >70% (peak area ratio
 measured by column chromatog. with a UV absorption detector). Agrochem.
 compns. contain the adjuvant and an agrochem. selected from among
 antimicrobials, insecticides, acaricides, **herbicides**, and plant
 growth regulators. Thus, lauric acid and glycidol were reacted in the
 presence of phosphoric acid to obtain hexaglycerin monolaurate (monoester
 content 87.7%). Nissorun V and Osadan formulations containing 0.1%
 hexaglycerin monolaurate resulted in a mortality rate of Kanzawa spider
 mite of 100%.

IT 38641-94-0, Roundup
 RL: AGR (Agricultural use); BAC (Biological activity or effector, except
 adverse); BSU (Biological study, unclassified); BIOL (Biological study);
 USES (Uses)
 (polyglycerin monoesters as agents for enhancing effectiveness of
 agrochems. and compns. containing adjuvants)

IT 121-75-5, Malathion
 RL: AGR (Agricultural use); BAC (Biological activity or effector, except
 adverse); BSU (Biological study, unclassified); BIOL (Biological study);
 USES (Uses)
 (polyglycerin monoesters as agents for enhancing effectiveness of
 agrochems. and compns. containing the adjuvants)

L36 ANSWER 7 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1998:123971 HCAPLUS
 DOCUMENT NUMBER: 128:201932
 TITLE: Protein-polysaccharide complex as delivery composition
 for **herbicides** and insecticides
 INVENTOR(S): McArdle, Blaise
 PATENT ASSIGNEE(S): USA
 SOURCE: PCT Int. Appl., 48 pp.
 CODEN: PIXXD2

DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 13
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9806258	A1	19980219	WO 1997-US13388	19970807 <--
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 5747416	A	19980505	US 1996-699578	19960816 <--
AU 9740484	A1	19980306	AU 1997-40484	19970807 <--
PRIORITY APPLN. INFO.: US 1996-699578 A 19960816 US 1993-89268 B2 19930708 US 1994-263001 B2 19940617 US 1995-523162 A2 19950905 WO 1997-US13388 W 19970807				
AB A protein-polysaccharide complex is used as a nontoxic and sustained release carrier for insecticides, herbicides, foliar nutrients and mixts. thereof. The protein is zein or prolamine, and the polysaccharide alginate, carrageenan, gum arabic, tragacanth, guar gum, pectin, ghatti gum or xanthan gum. Methods for using a solution, solid or flowable impregnated protein-polysaccharide complex as a delivery agent for the control of plant populations and insect populations and as a preservative for cut flowers are described.				
IT 121-75-5, Malathion 38641-94-0, Roundup RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses) (protein-polysaccharide complex as delivery composition for)				
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT				
L36 ANSWER 8 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN				
ACCESSION NUMBER: 1998:89364 HCAPLUS				
DOCUMENT NUMBER: 128:165312				
TITLE: The plant-like structural proteins and metabolic pathways of apicomplexan parasites and the development of diagnostic and therapeutic reagents				
INVENTOR(S): McLeod, Rima L. W.; Roberts, Craig W.; Roberts, Fiona; Johnson, Jennifer J.; Mets, Laurens				
PATENT ASSIGNEE(S): Arch Development Corp., USA; McLeod, Rima L. W.; Roberts, Craig W.; Roberts, Fiona; Johnson, Jennifer J.; Mets, Laurens				
SOURCE: PCT Int. Appl., 212 pp. CODEN: PIXXD2				
DOCUMENT TYPE: Patent				
LANGUAGE: English				
FAMILY ACC. NUM. COUNT: 1				
PATENT INFORMATION:				

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9803661	A2	19980129	WO 1997-US12497	19970718 <--
WO 9803661	A3	19981008		
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT,				

RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, US, US,
 US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR,
 GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA,
 GN, ML, MR, NE, SN, TD, TG

AU 9740411 A1 19980210 AU 1997-40411 19970718 <--

EP 918868 A2 19990602 EP 1997-937983 19970718 <--

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, FI

PRIORITY APPLN. INFO.:

US 1996-22209P P 19960719

US 1996-773302 A2 19961223

US 1997-40849P P 19970317

US 1997-49620P P 19970613

WO 1997-US12497 W 19970718

AB Apicomplexan parasites have been found to have a number of structural proteins and metabolic pathways showing greater similarity to the plant homologs than the animal ones. These proteins and pathways can be used as targets for the diagnosis and treatment of infection with greater specificity for the parasite with lowered risks of complications for the carrier. Suitable targets include enzymes, transit peptides, their genes or promoters. Therapeutic agents include antibodies, antisense nucleic acids, and enzyme inhibitors. In vitro inhibitor assays identified a number of pathways: heme biosynthesis, alternative oxidase, glyoxylate cycle, and chorismate biosynthesis, thought to be absent from animals. **Herbicides** active against these pathways were tested and found to inhibit a number of Apicomplexans. There was some synergism when inhibitors were used in combination. An EST clone from *Toxoplasma gondii* was found to have sequence similarity to tomato chorismate synthase.

IT 1071-83-6, **Glyphosate**

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(as parasiticide for *Toxoplasma gondii*; plant-like structural proteins and metabolic pathways of apicomplexan parasites and development of diagnostic and therapeutic reagents)

IT 9002-02-2, **Succinate dehydrogenase**

RL: BOC (Biological occurrence); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses) (inhibition in Apicomplexans of; plant-like structural proteins and metabolic pathways of apicomplexan parasites and development of diagnostic and therapeutic reagents)

L36 ANSWER 9 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1997:781936 HCAPLUS

DOCUMENT NUMBER: 128:58435

TITLE: Some hematological and physiological changes induced by certain pesticides to the Nile catfish *Clarias lazera* (Clariidae) from Egypt

AUTHOR(S): Abou-zeid, Mohamed M.; Zahkoul, S. A.; El-Nabaraway, S. K.; El-Zawahry, E. I.

CORPORATE SOURCE: Zoology Dept., Faculty of Science, and Faculty of Science for Girls, Al-Azhar University, Nasri-Cit., Cairo, Egypt

SOURCE: Al-Azhar Bulletin of Science (1996), 7(1, Pt. 2), 799-809

CODEN: ABSCE7; ISSN: 1110-2535

PUBLISHER: Al-Azhar University, Faculty of Science

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The changes induced by a group of pesticides (2 **herbicides**) **glyphosate** (Roundup) and paraquat (Garamaxon); (2 insecticides) malathion and cyanophos (Cyanox); and (1 nematocide) Lannate in the blood

counts, Hb, and serum GPT, GOT, glucose, total protein, and albumin content of the Nile catfish *C. lazera* were studied. Samples of whole blood were taken 24, 48, 72, and 96 h after exposure to a sublethal concentration of the pesticides (0.1 LD50). The results revealed that exposure to these low doses caused considerable changes in the RBC and WBC counts, Hb contents, as well as noticeable changes in the levels of GPT, GOT, glucose, total protein, and albumin contents. Some of these changes were found to be partially recovered 15 days after removing the pesticides from the surrounding media. The data showed that even these low doses have a marked effect on fish liver that was responsible for the regulation of all the studied parameters in the blood.

IT 121-75-5, Malathion 1071-83-6, **Glyphosate**

RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(hematol. and physiol. changes induced by pesticides in Nile catfish from Egypt)

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 10 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1997:640604 HCAPLUS

DOCUMENT NUMBER: 127:277699

TITLE: Hyperaccumulation of metals in plant shoots, useful for soil phytoremediation

INVENTOR(S): Ensley, Burt D.; Blaylock, Michael J.; Dushenkov, Slavik; Kumar, Nanda P. B. A.; Kapulnik, Yoram; Huang, Jianwei

PATENT ASSIGNEE(S): Phytotech, Inc., USA

SOURCE: PCT Int. Appl., 67 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9734714	A1	19970925	WO 1997-US4956	19970319 <--
W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG			
US 5917117	A	19990629	US 1996-621138	19960321 <--
AU 9724242	A1	19971010	AU 1997-24242	19970319 <--
AU 725833	B2	20001019		
EP 888197	A1	19990107	EP 1997-919929	19970319 <--
R:	AT, BE, CH, DE, DK, ES, FR, GB, LI, NL, SE, PT, FI			

PRIORITY APPLN. INFO.:

US 1996-621138 A 19960321

US 1996-27127P P 19960930

WO 1997-US4956 W 19970319

AB The invention provides methods by which hyperaccumulation of metals in plant shoots, especially of Brassica, is induced by exposure to inducing agents. In preferred embodiments, manipulations that increase availability of metals to the plant are employed prior to application of the inducing agent. Effective inducing agents include conditions of low pH, chelators, **herbicides**, and high levels of heavy metals. Other phytotoxic agents are also useful. Application of multiple inducing agents results in synergistic effects. The hyperaccumulating plants remove heavy metals from polluted soils.

IT 6915-15-7, Malic acid 38641-94-0, Roundup
 RL: AGR (Agricultural use); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
 (agent for hyperaccumulation of metals in plant shoots, useful for soil phytoremediation)

L36 ANSWER 11 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:548436 HCAPLUS
 DOCUMENT NUMBER: 125:188354
 TITLE: Preparation of alkyl polysaccharide derivatives for pesticide formulations
 INVENTOR(S): Kirby, Andrew Francis; Moody, Keith
 PATENT ASSIGNEE(S): Ici Australia Operations Proprietary Limited, Australia
 SOURCE: PCT Int. Appl., 39 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9620203	A1	19960704	WO 1995-AU871	19951222 <--
W:	AL, AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK			
RW:	KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG			
AU 9643232	A1	19960719	AU 1996-43232	19951222 <--
AU 700590	B2	19990107		
EP 799236	A1	19971008	EP 1995-941991	19951222 <--
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE			
BR 9510417	A	19980519	BR 1995-10417	19951222 <--
JP 10511650	T2	19981110	JP 1995-520073	19951222 <--
ZA 9510991	A	19960611	ZA 1995-10991	19951227 <--
US 5783692	A	19980721	US 1997-849947	19970821 <--
PRIORITY APPLN. INFO.:			AU 1994-299	19941223
			WO 1995-AU871	19951222
AB	The alkyl polysaccharide derivs. are R1(OG)mXm, (R1 = H or hydrophobic moiety; G = saccharide residue; X = succinic anhydride residue; n, m = 1-200). They are prepared by the reaction of an alkenyl succinic anhydride with alkyl polysaccharide(s). The derivs. are surfactants which enhance the efficacy of herbicides and pesticides.			
IT	1071-83-6, Glyphosate 38641-94-0 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses) (formulation with alkyl polysaccharide derivs.)			
IT	108-30-5DP, Succinic anhydride, alkenyl derivs., reaction products with alkyl polysaccharides RL: MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses) (surfactants and adjuvants for pesticide formulations)			

L36 ANSWER 12 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:388630 HCAPLUS
 DOCUMENT NUMBER: 125:107798
 TITLE: Sprayable gluten-based formulation for pest control
 INVENTOR(S): Shasha, Baruch; McGuire, Michael
 PATENT ASSIGNEE(S): United States Dept. of Agriculture, USA; Biotechnology Research and Development Corp.

SOURCE: U.S., 12 pp., Cont.-in-part of U.S. Ser. No. 134, 999, abandoned.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5523083	A	19960604	US 1994-353918	19941212 <--
CA 2174939	AA	19950420	CA 1994-2174939	19941005 <--
US 5505940	A	19960409	US 1995-408138	19950321 <--
WO 9618294	A1	19960620	WO 1995-US15942	19951207 <--
W: AU, CA, NZ				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9642923	A1	19960703	AU 1996-42923	19951207 <--
BR 9806596	A	20010918	BR 1998-6596	19980610

PRIORITY APPLN. INFO.:
 US 1993-134999 B2 19931011
 US 1994-353918 A 19941212
 WO 1995-US15942 W 19951207

AB A process of formulating a pest control agent into a sprayable gluten-based formulation comprises admixing gluten, a pest control agent, a pH adjuster, and an aqueous solvent to form a sprayable formulation with a pH of .apprx.3.0-5.0 or .apprx.9.5-12.0 and a gluten concentration of .apprx.0.1-5.0 g/100 mL. The present invention also provides a process of decreasing the population of a pest of a living organism comprising formulating a pest control agent into a sprayable gluten-based formulation and delivering the formulation to the external surface of the living organism. Thus, 500 mL of 0.011% solution of NaOH and 0.15% urea in deionized water were mixed with *Bacillus thuringiensis* tech. powder (50 mg). The mixture was formulated with 1% gluten and applied to cotton plants which were then subjected to simulated rainfall, dried, and placed in a dish with European corn borer larvae. Insect mortality was 71%, whereas a similar formulation lacking the gluten resulted in only 15% mortality when tested with simulated rainfall.

IT 121-75-5, Malathion 1071-83-6, Glyphosate
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
 (sprayable gluten-based formulations of)

L36 ANSWER 13 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:87122 HCAPLUS
 DOCUMENT NUMBER: 124:168279
 TITLE: Trialkanolamine derivatives as pesticide enhancers.
 INVENTOR(S): Hasebe, Keiko; Tomioka, Keiichiro; Suzuki, Tadayuki; Hioki, Yuichi
 PATENT ASSIGNEE(S): Kao Corp., Japan
 SOURCE: PCT Int. Appl., 108 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9533379	A2	19951214	WO 1995-JP996	19950524 <--
WO 9533379	A3	19960125		
W: BR, CN, JP, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				

EP 762830	A2	19970319	EP 1995-919627	19950524 <--
EP 762830	B1	20011219		
R: BE, DE, ES, FR, GB, IT				
BR 9507760	A	19970902	BR 1995-7760	19950524 <--
JP 10501800	T2	19980217	JP 1995-500643	19950524 <--
ES 2170147	T3	20020801	ES 1995-919627	19950524
US 5849663	A	19981215	US 1996-737467	19961121 <--
US 6008158	A	19991228	US 1998-165318	19981002

PRIORITY APPLN. INFO.:

JP 1994-121547	A	19940602
JP 1995-36065	A	19950131
WO 1995-JP996	W	19950524

AB The tertiary amines [R1(CR4HOCHR7)p]N[(CR8HCR5O)qR2][(CR9HCR6HO)rR3] (R1,R2,R3=H,alkyl, alkenyl, etc.;R4-R9=H or Me;p,q,r=1-30) and the related quaternary ammonium compds. are enhancers for acaricides, insecticides, fungicides, **herbicides** and plant growth regulators.

IT **121-75-5**, Malathion **38641-94-0**, Roundup

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(trialkanolamine derivs. as activity enhancers for)

L36 ANSWER 14 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1995:991038 HCAPLUS

DOCUMENT NUMBER: 124:48346

TITLE: Emulsified spray formulations.

INVENTOR(S): Martin, Robert; Cayley, George R.; Thacker, Jonathan R. M.; Hall, Franklin R.; North, Denise K.; Groome, John M.; Jeffries, David A.

PATENT ASSIGNEE(S): Roussel-UCLAF, Fr.

SOURCE: U.S., 13 pp. Cont.-in-part of U.S. Ser. No. 979,452, abandoned.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 4

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 5466458	A	19951114	US 1994-196809	19940215 <--
PRIORITY APPLN. INFO.:			US 1992-845804	19920309
			US 1992-979452	19921120
			US 1993-78212	19930617

AB A formulation suitable for spraying or for dilution with water to form a sprayable preparation, is given. The formulation comprises an active ingredient, optionally a carrier or solvent, an emulsifier and an evaporation retardant. The formulation satisfies the formula: (oil phase mass)/(retardant mass) ≤ $M_{oil}/M_{retardant} + \exp[\ln((L/4) + C \ln(AXB)) / C]$, where $L \leq 15$, $A = 700376$, $B = -1.51$, $C = 0.8472$, M_{oil} is the weighted average relative molar mass of the oil phase $M_{retardant}$ is the weighted average relative molar mass of the retardant, and $X = (M_{oil})^{1.8}/Y$, where Y is the molar solubility ratio of the formulation, defined as the min. number of moles of the oil phase which will dissolve the retardant, divided by the number of moles of retardant, provided that, in the formula above, any solvent which has no liquid phase at 27° is excluded. The formulation may include a pesticide or **herbicide**. The action of the evaporation retardant is improved. Suitable evaporation retardants are 1-hexadecylamine, 1-heptadecylamine, 1-octadecylamine, or hexadecan-1-ol, optionally mixed with octadecan-1-ol. The formulation is usable for pesticides, dyes, drugs, paints, perfumes, textile finishes, etc.

IT **121-75-5 1071-83-6**, Glyphosate

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(emulsified spray formulations)

L36 ANSWER 15 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1995:767711 HCAPLUS
 DOCUMENT NUMBER: 123:163323
 TITLE: Enhancer composition for agricultural chemicals.
 INVENTOR(S): Hasebe, Keiko; Suzuki, Tadayuki; Hioki, Yuichi
 PATENT ASSIGNEE(S): Kao Corp., Japan
 SOURCE: PCT Int. Appl., 108 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9517817	A1	19950706	WO 1994-JP2263	19941227 <--
W: BR, CN, JP, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 685995	A1	19951213	EP 1995-904000	19941227 <--
EP 685995	B1	19990714		
R: BE, DE, FR, GB, IT				
BR 9406470	A	19960123	BR 1994-6470	19941227 <--
CN 1118567	A	19960313	CN 1994-191323	19941227 <--
CN 1112846	B	20030702		
JP 08509241	T2	19961001	JP 1994-517922	19941227 <--
JP 3507078	B2	20040315	JP 1995-517922	19941227
US 2001029240	A1	20011011	US 1998-53084	19980401
US 6706666	B2	20040316		
PRIORITY APPLN. INFO.:				
			JP 1993-337502	A 19931228
			WO 1994-JP2263	W 19941227
			US 1995-507483	B1 19950828
AB	A composition which can enhance the effectiveness of an agricultural chemical without causing phytotoxicity to crops, comprises N-containing compd(s). selected from tertiary amines, tertiary amine salts and a quaternary ammonium salts, and a chelating agent, wherein the content of the chelating agent ranges from 0.01 to 30 mol per mol of the N-containing compound. Surfactants and penetration enhancers may also be present. Thus, a composition comprising C ₁₂ H ₂₅ N[(CH ₂ CH ₂ O) _n H][(CH ₂ CH ₂ O) _m H] and EDTA-4Na enhanced the herbicidal activity of Karmex.			
IT	38641-94-0, Roundup RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses) (enhancer composition for herbicidal activity of)			
IT	6915-15-7, Malic acid RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses) (enhancer composition for herbicides and pesticides containing)			
IT	121-75-5, Malathion RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses) (enhancer composition for insecticidal activity of)			

L36 ANSWER 16 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1995:734830 HCAPLUS
 DOCUMENT NUMBER: 123:135512
 TITLE: Environmental pollutants alter taste responses in the gerbil
 AUTHOR(S): Schiffman, Susan S.; Suggs, Mark S.; Abou Donia, Mohamed B.; Erickson, Robert P.; Nagle, H. Troy
 CORPORATE SOURCE: Dep. Psychiatry, Duke Univ. Medical Center, Durham, NC, 27710, USA
 SOURCE: Pharmacology, Biochemistry and Behavior (1995), 52(1), 189-94
 CODEN: PBBHAU; ISSN: 0091-3057
 PUBLISHER: Elsevier

DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The purpose of this study was to determine the effects of 11 environmental pollutants (nine insecticides and two **herbicides**) on electrophysiol. taste responses in the gerbil. Integrated chorda tympani (CT) recordings were obtained from gerbils to a range of tastants before and after a 4-min application of 1 of 11 environmental pollutants. The taste stimuli were: sodium chloride (100 mM), calcium chloride (300 mM), magnesium chloride (100 mM), HCl (10 mM), potassium chloride (500 mM), monosodium glutamate (MSG) (50 mM), sucrose (100 mM), fructose (300 mM), sodium saccharin (10 mM), quinine HCl (30 mM), and urea (2 M). The nine insecticides included organophosphorus, carbamate, and pyrethroid insecticides. The seven organophosphorus insecticides tested were: acephate, carbofuran, chlorpyrifos, chlorpyrifos oxon, demeton, malathion, and methamidophos. The carbamate insecticide carbaryl and pyrethroid insecticide fenvalerate were also tested. Two **herbicides**, paraquat and **glyphosate**, were tested, and dose-response curves for each of these two **herbicides** were also determined. All of the 11 insecticides and **herbicides** had an effect on some of the taste stimuli tested. Application of 10 mM methamidophos exhibited the greatest amount of suppression on the 11 taste solns. Each taste stimulus was significantly suppressed with the exception of 2M urea. **Herbicides** paraquat and **glyphosate** also reduced responses to several tastants. These data indicate that environmental pollutants can modify taste responses in the gerbil.

IT 121-75-5, Malathion 1071-83-6, **Glyphosate**
 RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
 (environmental pollutants alter taste responses in gerbil)

L36 ANSWER 17 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1995:426850 HCAPLUS

DOCUMENT NUMBER: 123:135902

TITLE: Quaternary ammonium salts and tertiary amines as pesticide enhancers.

INVENTOR(S): Hioki, Yuichi; Hasebe, Keiko; Suzuki, Tadayuki; Tachizawa, Osamu; Tomifuji, Takeshi; Katoh, Tohru; Sotoya, Kohshiro; Tomioka, Keiichiro; Nishimoto, Uichiro; et al.

PATENT ASSIGNEE(S): Kao Corp., Japan

SOURCE: Eur. Pat. Appl., 85 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 638236	A1	19950215	EP 1994-111391	19940721 <--
EP 638236	B1	19980930		
R: BE, DE, FR, GB, IT				
US 5563111	A	19961008	US 1994-274718	19940718 <--
EP 842603	A1	19980520	EP 1998-102365	19940721 <--
EP 842603	B1	20001227		
R: BE, DE, FR, GB, IT				
BR 9403111	A	19950502	BR 1994-3111	19940729 <--
JP 07097301	A2	19950411	JP 1994-181194	19940802 <--
JP 3382363	B2	20030304		
CN 1111474	A	19951115	CN 1994-109508	19940802 <--
CN 1073795	B	20011031		
JP 07223911	A2	19950822	JP 1994-311872	19941215 <--
JP 3382396	B2	20030304		

JP 07223912 A2 19950822 JP 1994-315229 19941219 <--
 JP 3382398 B2 20030304
 PRIORITY APPLN. INFO.: JP 1993-192426 A 19930803
 JP 1993-315309 A 19931215
 JP 1993-318496 A 19931217
 EP 1994-111391 A3 19940721

OTHER SOURCE(S): MARPAT 123:135902

AB The quaternary ammonium salts RR1R2N+CH2CH[O(CH2CHR4O)nCOR5]CH2R3 X-
 [R,R1=alkyl, (CH2CHR6O)mH, etc.; R2=H, alkyl, benzyl; R3=O(CH2CHR7O)qCOR8, etc.;
 R4,R6,R7=H, Me; R5,R8=alkyl, alkenyl; n,m=1-30; q=0, n; X=counter ion], related
 compds. and tertiary amines are enhancers for insecticides,
herbicides, etc. The enhancers are preferably used with nonionic
 surfactants.

IT 121-75-5, Malathion 38641-94-0, Roundup
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
 (quaternary ammonium salt enhancers for)

L36 ANSWER 18 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1994:551293 HCAPLUS

DOCUMENT NUMBER: 121:151293

TITLE: Quaternary ammonium pesticide enhancers.

INVENTOR(S): Tachizawa, Osamu; Tomifuji, Takeshi; Katoh, Tohru;
 Nishimoto, Uichiro; Nishimoto, Yoshifumi; Sotoya,
 Kohshiro; Hasebe, Keiko; Hioki, Yuichi

PATENT ASSIGNEE(S): Kao Corp., Japan

SOURCE: Eur. Pat. Appl., 55 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 597488	A1	19940518	EP 1993-118361	19931112 <--
EP 597488	B1	19990929		
R: BE, DE, FR, IT				
JP 06219908	A2	19940809	JP 1993-285329	19931115 <--
US 5538937	A	19960723	US 1995-468914	19950606 <--
US 5728649	A	19980317	US 1995-467826	19950606 <--
US 5985794	A	19991116	US 1997-985365	19971204
PRIORITY APPLN. INFO.:		JP 1992-303978		19921113
		JP 1992-303979		19921113
		JP 1992-303980		19921113
		US 1993-151169		19931112
		US 1995-467826		19950606

OTHER SOURCE(S): MARPAT 121:151293

AB The activity of pesticides, including **herbicides**, is enhanced by
 the quaternary ammonium compds. BCDN+C3H6N(COR1)A X- (I) [A = H, CH2CH2CN,
 CH2CH2CO2H, CH(CH2CO2Na)CO2Na, CnH2nO(CH2CHRO)pCOR2, etc.; B,C,D = H, Me,
 Et, etc.; R = H or Me; R1 = C4-30 alkyl or alkenyl; R2 = R1, CmH2mNHCOR1,
 etc.; m,n = 2-9; p = 0,1-30; X- = counter ion] and related compds. I (A =
 C3H6NHCOC17H35, B = C = D = Me, R1 = C17H35, X = Cl) (preparation given)
 enhanced the activity of Osadan against Tetranychus kanzawai on kidney
 bean leaves.

IT 38641-94-0, Roundup
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological
 study, unclassified); BIOL (Biological study)
 (enhancement of **herbicidal** activity of, by quaternary
 ammonium compds.)

IT 121-75-5, Malathion
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological

study, unclassified); BIOL (Biological study)
(enhancement of insecticidal activity of, by quaternary ammonium
comps.)

L36 ANSWER 19 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1994:127796 HCAPLUS

DOCUMENT NUMBER: 120:127796

TITLE: **Herbicide** compositions containing magnesium salts.

INVENTOR(S): Yoshii, Hiroshi; Maeda, Masaru; Kikukawa, Koji

PATENT ASSIGNEE(S): Ishihara Sangyo Kaisha, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05271021	A2	19931019	JP 1992-361995	19921225 <--
JP 3253392	B2	20020204		

PRIORITY APPLN. INFO.: JP 1991-361431 A1 19911227

AB **Herbicide** compns. contain 1-(4,6-dimethoxypyrimidin-2-yl)-3-(3-trifluoromethyl-2-pyridylsulfonyl)urea (I) or its salts and homoalanin-4-ylmethylphosphinic acid (II), [2-amino-4-(hydroxymethylphosphinoyl)butyryl]alanylalanine and/or N-(phosphonomethyl)glycine, or their salts and inorg. Mg salt stabilizers. I (95% purity) 5.42, DL-II (84.6% purity) 54.1, Newkalgen EX 70 (Na dioctyl **sulfosuccinate**-Na benzoate mixture) 20.0, MgCO₃ 20.0, and Glauber's salt 0.48 weight part were mixed to prepare a wettable powder, which was diluted with H₂O and stirred at 25-30° for 24 h to result in 3% decomposition of I, vs. 57%, without Mg salt.

IT 1071-83-6D, mixts. containing ureas and

RL: BIOL (Biological study)

(**herbicides** containing magnesium salts and)

L36 ANSWER 20 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1993:554027 HCAPLUS

DOCUMENT NUMBER: 119:154027

TITLE: Composition comprising an oxynil derivative and to liquid **herbicide** or pesticide

INVENTOR(S): Schapira, Joseph; Pecheur, Jacques; Ambrosi, Dominique

PATENT ASSIGNEE(S): C F P I, Fr.

SOURCE: Eur. Pat. Appl., 23 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 552084	A1	19930721	EP 1993-400048	19930111 <--
EP 552084	B1	20011121		
R: BE, DE, DK, ES, FR, GB, IT				
FR 2685996	A1	19930716	FR 1992-267	19920113 <--
ES 2167327	T3	20020516	ES 1993-400048	19930111
CA 2087226	AA	19930714	CA 1993-2087226	19930113 <--
CA 2087226	C	20030715		
AU 9331191	A1	19930715	AU 1993-31191	19930113 <--
AU 669865	B2	19960627		

ZA 9300214 A 19940113 ZA 1993-214 19930113 <--
 US 5695773 A 19971209 US 1994-353337 19941205 <--
 PRIORITY APPLN. INFO.: FR 1992-267 A 19920113
 US 1993-2399 B1 19930113

AB A liquid synergistic composition comprises an oxynil **herbicide** and 2nd liquid **herbicide**. Liquid compns. may also contain an oxynil **herbicide** and a pesticide (insecticide, fungicide, etc.). An emulsion concentrate comprising 192 g ioxynil octanoate and 480 g prosulfocarb/L, applied at 0.5 L/ha, synergistically controlled *Chenopodium album*, *Galium aparine* and *Veronica*.
 IT 81591-81-3D, Sulfosate, mixts. with oxynils
 RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
 (herbicides, synergistic)
 IT 121-75-5
 RL: BIOL (Biological study)
 (liquid compns. containing oxynil **herbicide** and)

L36 ANSWER 21 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1993:488941 HCAPLUS
 DOCUMENT NUMBER: 119:88941
 TITLE: Enhancement of pesticidal activity with polyglycerol derivatives.
 INVENTOR(S): Hioki, Yuichi; Kurita, Kazuhiko; Suzuki, Tadayuki; Azuma, Toshikazu
 PATENT ASSIGNEE(S): Kao Corp., Japan
 SOURCE: Eur. Pat. Appl., 27 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 539980	A1	19930505	EP 1992-118505	19921029 <--
EP 539980	B1	19970702		
R: BE, DE, FR, GB, IT, SE				
JP 05345702	A2	19931227	JP 1992-268573	19921007 <--
JP 3228571	B2	20011112		
CA 2081652	AA	19930501	CA 1992-2081652	19921028 <--
CA 2081652	C	20020910		
EP 765602	A1	19970402	EP 1996-113319	19921029 <--
EP 765602	B1	20010110		
R: BE, DE, FR, GB, IT				
US 5912208	A	19990615	US 1997-912475	19970818 <--
PRIORITY APPLN. INFO.:				
			JP 1991-286356	A 19911031
			US 1992-967059	B1 19921028
			EP 1992-118505	A3 19921029

AB The polyglycerols and/or polyglycerol derivs.
 $R_{10}(EO)x_1(R_{50})y_1(R_{40})z_1[CH_2CH[(EO)x_2(R_{50})y_2(R_{40})z_2OR_2]CH_2O]_n(EO)x_3(R_{50})y_3(R_{40})z_3R_3$ [R1, R2, R3 = H, C2-31 acyl, SO3Na, SO3K, SO3H.N(C2H4OH)3 or SO3H.NH(C2H4OH)2; (EO)x1, (EO)x2, (EO)x3 = polyoxypropylene; (R50)y1, (R50)y2, (R50)y3 = polyoxypropylene; (R40)z1, (R40)z2, (R40)z3 = polyoxybutylene; x1, y1, z1, x2, y2, z2, x3, y3, z3 = 0, ≥1; x1 + y1 + z1 + x2 + y2 + z2 + x3 + y3 + z3 = 0, 1-600, n ≥ 1], optionally mixed with R10[CH2CH(OR2)CH2O]nR3, enhance the activity of pesticides and **herbicides**. Osadan (15% wettable powder, diluted 2000-fold) gave only 43.2% control of *Tetranychus kanzawai* on kidney bean leaf disks, but 100% control was shown when 0.1% decaglycerol monolaurate was added.

IT 38641-94-0, Roundup
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
 (enhancement of **herbicidal** activity of, with polyglycerols and/or polyglycerol derivs.)

IT 121-75-5
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
 (enhancement of insecticidal activity of, with polyglycerols and/or polyglycerol derivs.)

L36 ANSWER 22 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1993:465514 HCAPLUS

DOCUMENT NUMBER: 119:65514

TITLE: Simultaneous determination of the **herbicides glyphosate**, glufosinate and bialaphos and their metabolites by capillary gas chromatography-ion-trap mass spectrometry

AUTHOR(S): Tsunoda, N.

CORPORATE SOURCE: National Research Institute of Police Science, 6, Sanban-cho, Chiyoda-ku, Tokyo, 102, Japan

SOURCE: Journal of Chromatography (1993), 637(2), 167-73

CODEN: JOCRAM; ISSN: 0021-9673

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A sensitive gas chromatog. (GC)-ion-trap mass spectrometric (IT-MS) method has been developed to determine simultaneously the **herbicides glyphosate**, glufosinate and bialaphos and their major metabolites. A single-step derivatization is achieved at 80° for 30 min with the reagent N-methyl-N-(tert-butyldimethylsilyl)trifluoroacetamide in DMF, which introduces the tert-butyldimethylsilyl group at active hydrogens and gives only a single peak for each compound. The derivs. of three **herbicides**, their metabolites and 19 amino acids were simultaneously chromatographed and well separated in a single run on a DB-1 fused-silica capillary column. Each tert-butyldimethylsilylated derivative produces an easily interpretable mass spectrum dominated by unique M-15, M-57, M-85 and M-159 fragment ions. The limits of detection were estimated to be 10-20 ng for **glyphosate** and glufosinate and their metabolites, and 500 ng for bialaphos, by GC-IT-MS. On the other hand, using GC anal. with flame ionization detection, **glyphosate** and glufosinate and their metabolites were detectable at levels of approx. 100 ng, but bialaphos could not be detected at a level of 5000 ng.

IT 56-84-8, Aspartic acid, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (determination of, by capillary gas chromatog.-mass spectrometry, as tert-butyldimethylsilyl derivs.)

IT 1071-83-6, **Glyphosate**
 RL: ANT (Analyte); ANST (Analytical study)
 (determination of, by gas chromatog.-mass spectrometry, as their butyldimethylsilyl derivative)

L36 ANSWER 23 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1993:207535 HCAPLUS

DOCUMENT NUMBER: 118:207535

TITLE: Modeling pesticide movement in forested watersheds: use of PRZM for evaluating pesticide options in loblolly pine stand management

AUTHOR(S): Dowd, J. F.; Bush, P. B.; Neary, D. G.; Taylor, J. W.; Berisford, Y. C.

CORPORATE SOURCE: Sch. For. Resour., Univ. Georgia, Athens, GA, 30602, USA

SOURCE: Environmental Toxicology and Chemistry (1993), 12(3), 429-39
CODEN: ETOCDK; ISSN: 0730-7268

DOCUMENT TYPE: Journal
LANGUAGE: English

AB The fate of pesticides in forest ecosystems is strongly influenced by climatic conditions. Drought or excessive rainfall may seriously affect dissipation rates, routes, and the extent of movement through soil profiles. The pesticide root zone model (PRZM) is designed to predict pesticide movement in unsatd. soils within and below the plant root zone in agricultural systems. The applicability of this model to a forested watershed was tested by using on site hydrol. data to simulate a field application of lindane. PRZM-predicted data were compared with measured residue levels and found to estimate accurately lindane movement and leaching at shallow soil depths (0-10 cm), but underestimated residue levels at deeper soil depths (40-50 cm). Model simulations were used to evaluate various insecticide and herbicide application scenarios used in pine plantation management. Results from these simulations indicate that insecticides commonly used for gypsy moth (*Lymantria dispar* L.) or southern pine beetle (*Dendroctonus frontalis* Zimm.) control either are not sufficiently persistent or are adsorbed in the soil to such an extent that they do not pose a potential groundwater contamination problem. In contrast, site preparation herbicides show a potential to leach whenever proper meteorol. conditions such as rainfall prevail after application. These herbicides are persistent ($t_{1/2} > 50$), moderately adsorbed ($10 > K_d > 0.1$, assuming 1.7% organic matter), and applied under conditions of reduced evapotranspiration.

IT 121-75-5, Malathion 1071-83-6, Glyphosate
RL: BIOL (Biological study)
(movement of, in forested watersheds, modeling of)

L36 ANSWER 24 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1992:475787 HCAPLUS

DOCUMENT NUMBER: 117:75787

TITLE: Pesticide chemicals manufacturing category effluent limitations guidelines, pretreatment standards, and new source performance standards

CORPORATE SOURCE: United States Environmental Protection Agency, Washington, DC, 20460, USA

SOURCE: Federal Register (1992), 57(70), 12560-601, 10 Apr 1992

CODEN: FEREAC; ISSN: 0097-6326

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Effluent limits, pretreatment stds. and performance stds. for new and existing facilities that manufacture pesticide active ingredients are proposed, under the Federal Clean Water Act. The manufacturers are categorized as those who make metalloorg. pesticide chems. (containing As, Cd, Cu, or Hg) and those who make organic pesticide chems. (including organotin compds.). Tables are given for active ingredient (94) limitations (daily maximum and monthly average) under best available technol. economically achievable and pretreatment stds. for existing sources, new source performance stds. and pretreatment stds. for new sources, and anal. methods (for 94 compds.). Addnl., effluent limitations (daily maximum and monthly average) for priority pollutants are proposed.

IT 121-75-5P, Malathion 1071-83-6DP, Glyphosate, salts and esters 1071-83-6P, Glyphosate

RL: MSC (Miscellaneous); PREP (Preparation)

(wastewater composition and treatment in manufacture of, stds. for)

L36 ANSWER 25 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1992:432896 HCAPLUS

DOCUMENT NUMBER: 117:32896
 TITLE: Pesticides and other agricultural risk factors for non-Hodgkin's lymphoma among men in Iowa and Minnesota
 AUTHOR(S): Cantor, Kenneth P.; Blair, Aaron; Everett, George; Gibson, Robert; Burmeister, Leon F.; Brown, Linda M.; Schuman, Leonard; Dick, Fred R.
 CORPORATE SOURCE: Epidemiol. Biostatist. Progr., Natl. Cancer Inst., Bethesda, MD, 20892, USA
 SOURCE: Cancer Research (1992), 52(9), 2447-55
 CODEN: CNREA8; ISSN: 0008-5472
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Data from an interview study of 622 white men with newly diagnosed non-Hodgkin's lymphoma and 1245 population-based controls in Iowa and Minnesota were used to measure the risk associated with farming and specific agricultural exposures. Men who ever farmed were at slightly elevated risk of non-Hodgkin's lymphoma that was not linked to specific crops or particular animals. Elevated risks were found, for personal handling, mixing, or application of several pesticide groups and for individual insecticides, including carbaryl, chlordane, dichlorodiphenyltrichloroethane, diazinon, dichlorvos, lindane, malathion, nicotine, and toxaphene. Assocns. were generally stronger for 1st use prior to 1965 than more recently, and when protective clothing or equipment was not used. Small risks were associated with the use of 2,4-D, but the risks did not increase with latency or failure to use protective equipment. The consistency of several findings, both within this study and with observations of others, suggests an important role for several insecticides in the etiol. of non-Hodgkin's lymphoma among farmers.
 IT 121-75-5, Malathion 1071-83-6, **Glyphosate**
 RL: ADV (Adverse effect, including toxicity); BIOL (Biological study) (occupational exposure to, in farming, non-Hodgkin's lymphoma in relation to)

L36 ANSWER 26 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1992:189510 HCAPLUS
 DOCUMENT NUMBER: 116:189510
 TITLE: The infrared spectra of high purity pesticide samples
 AUTHOR(S): Wasiak-Wisniewska, Danuta; Konopski, Leszek
 CORPORATE SOURCE: Inst. Przem. Org., Warsaw, 03-236, Pol.
 SOURCE: Pestycydy (Warsaw) (1991), (3), 13-45
 CODEN: PSTYDL; ISSN: 0208-8703
 DOCUMENT TYPE: Journal
 LANGUAGE: Polish
 AB Spectra of 28 pesticide stds. are presented. Sample purity (>99%) was assessed by HPLC, GLC, TLC and IR. The spectra were recorded using a grading IR spectrophotometer. Ligs. (isomalathion and MCPA-methyl) were sampled as capillary films between potassium bromide windows. Stds. KBr disks were prepared for the solids (all other compds.). The IR spectra presented here can be reproduced in labs. with minimal IR equipment.
 IT 1071-83-6 3344-12-5
 RL: PRP (Properties) (IR spectrum of)

L36 ANSWER 27 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1992:106796 HCAPLUS
 DOCUMENT NUMBER: 116:106796
 TITLE: Method of obtaining N-substituted derivatives of aminoacetic acid
 INVENTOR(S): Soroka, Mirosław
 PATENT ASSIGNEE(S): Politechnika Wroclawska, Pol.
 SOURCE: Pol., 17 pp. Abstracted and indexed from the unexamined application.

CODEN: POXXA7
 DOCUMENT TYPE: Patent
 LANGUAGE: Polish
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PL 153593	B1	19910531	PL 1988-273947	19880728 <--
			PL 1988-273947	19880728

PRIORITY APPLN. INFO.: CASREACT 116:106796; MARPAT 116:106796

AB Title compds. RNHCH₂CO₂H [R = alkyl; XCR1R₂; R₁,R₂ = same or different allyl, cycloalkyl, aryl, H; R₁R₂ = (CH₂)_n, n = 2-7, or containing O, N, S; X = phosphonyl, carboxyl], useful as **herbicides**, are prepared by reaction of RNH₂ (same R) with at least 2 equiv glyoxylic acid in H₂O or other polar solvents, preferably formic or acetic acids, at temps. under 373 K, until evolution of CO₂. At this stage, N-formyl-N-substituted glycine derivs. are formed, which are hydrolyzed with mineral acids, especially aqueous HCl, to give a crystalline product. Thus, reaction of 1.11 g aminomethylphosphonic acid with 1.85 g glyoxylic acid monohydrate in 10 mL water at 340-345 K followed by treatment with 20 mL of 12 M HCl gave 93% N-(phosphonomethyl)glycine.

IT 1071-83-6P 41035-84-1P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

IT 56-84-8, Aspartic acid, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with glyoxylic acid)

L36 ANSWER 28 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1991:675428 HCAPLUS

DOCUMENT NUMBER: 115:275428

TITLE: Detoxification spectrum of the cigarette beetle
 symbiont Symbiotaphrina kochii in culture

AUTHOR(S): Shen, S. K.; Dowd, P. F.

CORPORATE SOURCE: Natl. Cent. Agric. Util. Res., USDA, Agric. Res.
 Serv., Peoria, IL, 61604, USA

SOURCE: Entomologia Experimentalis et Applicata (1991
), 60(1), 51-9

CODEN: ETEAAT; ISSN: 0013-8703

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The ability of cultures of *S. kochii* to utilize toxins as C sources and produce detoxifying enzymes was tested. This yeast could apparently use many of the plant allelochemicals, meal toxins, mycotoxins, insecticides, and **herbicides** tested as C sources, suggesting the ability to detoxify these compds. Detoxifying enzymes that were detected using representative substrates included aromatic ester hydrolase, glucosidase, phosphatase, and glutathione transferase. This yeast also hydrolyzed the organophosphorus insecticide parathion. Thus, this yeast appears to have broad-spectrum detoxifying capabilities. Either this strain of yeast, improved strains, or other microorganisms to which genetic material from this yeast is transferred may be of use in decontaminating materials containing multiple toxins.

IT 121-75-5 1071-83-6, **Glyphosate**
 RL: PRP (Properties)
 (degradation of, by *Symbiotaphrina kochii*)

L36 ANSWER 29 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1990:558296 HCAPLUS

DOCUMENT NUMBER: 113:158296

TITLE: Analysis of target and nontarget pollutants in aqueous

and hazardous waste samples by liquid chromatography/particle beam mass spectrometry

AUTHOR(S): Brown, Mark A.; Kim, In Suk; Sasinos, Fassil I.; Stephens, Robert D.

CORPORATE SOURCE: Hazard. Mater. Lab., California Dep. Health Serv., Berkeley, CA, 94704, USA

SOURCE: ACS Symposium Series (1990), 420 (Liq. Chromatogr./Mass Spectrom.), 198-214
CODEN: ACSMC8; ISSN: 0097-6156

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Particle beam liquid chromatog./mass spectrometry (PB/LC/MS) based methods for the detection of target compds. daminozide, 2,4-D, Silvex, and 4-chlorobenzene sulfonic acid are presented. Sepns. are by reversed phase or anion exchange chromatog. Calibration curves and practical quantitation limits for electron impact (EI) and pos. and neg. chemical ionization (PCI and NCI) mass spectra for 21 compds. are described. EI spectra match existing libraries. Characterizing nontarget pollutants is more difficult. LC separation of nontarget compds. in aqueous leachate samples from Stringfellow and Casmalia hazardous waste sites and drinking water in California, with anion exchange chromatog. PB/MS via EI, PCI and NCI provides only a partial characterization. Matching spectra of resolved nontarget analytes with library spectra fails apparently because they are all absent from available MS libraries.

IT 1071-83-6, Glyphosate 1596-84-5, Daminozide
RL: ANT (Analyte); ANST (Analytical study)
(determination of, in water and waste and wastewater, liquid chromatog.-particle beam mass spectrometry in)

L36 ANSWER 30 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1990:231049 HCAPLUS

DOCUMENT NUMBER: 112:231049

TITLE: Modification of the transport of protons and calcium ions across mitochondrial coupling membrane by N-(phosphonomethyl)glycine

AUTHOR(S): Olorunsogo, Olufunso O.

CORPORATE SOURCE: Dep. Biochem., Univ. Ibadan, Ibadan, Nigeria

SOURCE: Toxicology (1990), 61(2), 205-9
CODEN: TXCYAC; ISSN: 0300-483X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The proton permeability of mitochondrial membranes suspended in 0.15N NH₄Cl was enhanced by N-(phosphonomethyl)glycine (PMG), a broad-spectrum and a nonselective herbicide, in a concentration-dependent manner. Significant decreases in light scattering by these membranes were observed at concns. greater than or equal to 600 μM PMG. The effect of PMG is therefore several times lower than that of FCCP, a classical uncoupler of oxidative phosphorylation. PMG significantly enhanced the movement of protons into mitochondrial matrix. Furthermore, the rate of PMG-induced release of Ca²⁺ ions following its accumulation by energized mitochondria was only slightly over one-half that induced by FCCP (1 μM). Whereas Ca²⁺ or Mg²⁺ only marginally reduced the effect induced by PMG, inclusion of glycine into the reaction media did not have any influence whatsoever on the effect induced by PMG. Thus, although PMG increases the permeability of the mitochondrial membrane to protons and to Ca²⁺, the herbicide does not seem to act like a true protonophore. Its uncoupling effect may, therefore, be due to its ability to act both as a chelator and a mild protonophore.

IT 1071-83-6, N-(Phosphonomethyl)glycine
RL: BIOL (Biological study)
(calcium and glycine transport across mitochondrial coupling membrane response to)

IT 110-15-6, Succinic acid, biological studies
 RL: BIOL (Biological study)
 (calcium transport by mitochondria mediated by, phosphonomethylglycine effect on)

L36 ANSWER 31 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1990:185414 HCAPLUS
 DOCUMENT NUMBER: 112:185414
 TITLE: Survey of farm wells for pesticides, Ontario, Canada, 1986 and 1987
 AUTHOR(S): Frank, R.; Braun, H. E.; Clegg, B. S.; Ripley, B. D.; Johnson, R.
 CORPORATE SOURCE: Agric. Lab. Serv. Branch, Ontario Minist. Agric. Food, Guelph, ON, N1G 2W1, Can.
 SOURCE: Bulletin of Environmental Contamination and Toxicology (1990), 44(3), 410-19
 CODEN: BECTA6; ISSN: 0007-4861
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Water samples from wells in rural areas in Ontario, Canada, were analyzed for **herbicides**, insecticides, and fungicides. In 1986, 10 wells contained pesticide residues and in 1987 the number was 4. Atrazine and its metabolite desethyl atrazine appeared in 9 of 10 wells in 1986.

IT 121-75-5, Malathion 1071-83-6, **Glyphosate**
 RL: POL (Pollutant); OCCU (Occurrence)
 (groundwater pollution by, in rural areas, in Ontario)

L36 ANSWER 32 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1990:114197 HCAPLUS
 DOCUMENT NUMBER: 112:114197
 TITLE: Stable **herbicidal** compositions containing **glyphosate**, simazine and diuron
 INVENTOR(S): Henriët, Michel Maurice; Mitchell, Robert William
 PATENT ASSIGNEE(S): Monsanto Europe S. A., Belg.
 SOURCE: Eur. Pat. Appl., 6 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 343142	A2	19891123	EP 1989-870067	19890517 <--
EP 343142	A3	19900711		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
DK 8902393	A	19891119	DK 1989-2393	19890517 <--
AU 8934856	A1	19891123	AU 1989-34856	19890517 <--
BR 8902306	A	19900109	BR 1989-2306	19890517 <--
JP 02017104	A2	19900122	JP 1989-121659	19890517 <--
ZA 8903700	A	19900131	ZA 1989-3700	19890517 <--
PRIORITY APPLN. INFO.:			GB 1988-11763	19880518

AB Broad-spectrum, stable, aqueous **herbicidal** compns. comprise a **glyphosate** salt, simazine, diuron, 3 surfactants, and a thickener. The surfactants are propylene oxide-ethylene oxide block copolymer, ethoxylated sorbitan C8-18 alkanoyl ester and ethoxylated fatty amine. A formulation comprised simazine 19.08, diuron 33.13, **glyphosate** monoisopropylamine salt 48.15, Pluronic PE-10500 3.00, 30% Shellflo-S 4.43, Genamin C-020 2.118 Tween-20 20.49, monopropylene glycol 8.63, silicone defoamer 0.10 and water 60.55 parts by weight

IT 1071-83-6D, **Glyphosate**, salts, mixts. with simazine and diuron

RL: BIOL (Biological study)
 (herbicidal composition, stable aqueous formulation of)
 IT 9014-37-3, Shellflo S
 RL: BIOL (Biological study)
 (herbicidal formulation containing, stable)

L36 ANSWER 33 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1990:72138 HCAPLUS
 DOCUMENT NUMBER: 112:72138
 TITLE: Microbial detoxification of xenobiotics using
 symbiotic yeast from the cigarette beetle
 INVENTOR(S): Dowd, Patrick F.; Shen, Samuel K.
 PATENT ASSIGNEE(S): United States Dept. of Agriculture, USA
 SOURCE: U. S. Pat. Appl., 12 pp. Avail. NTIS Order No.
 PAT-APPL-7-303 327.
 CODEN: XAXXAV
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 303327	A0	19890615	US 1989-303327	19890130 <--
US 4968620	A	19901106		

PRIORITY APPLN. INFO.: US 1989-303327 19890130
 AB A strain of symbiotic yeast from the cigarette beetle (*Lasioderma serricorne*) can detoxify a variety of xenobiotics including insecticides, herbicides, mycotoxins, and plant toxins. Yeast NRRL Y-17065, isolated from *L. serricorne*, was incubated 1 h at 30° in 0.1M phosphate buffer, pH 7.4 containing radiolabeled parathion at 1 + 10⁻⁵M. About 100 pmol 4-nitrophenol was found in the supernatant, indicating .apprx.2.4% of the parathion had been hydrolyzed.
 IT 121-75-5, Malathion 1071-83-6
 RL: BIOL (Biological study)
 (yeast of cigarette beetle response to)

L36 ANSWER 34 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1989:402387 HCAPLUS
 DOCUMENT NUMBER: 111:2387
 TITLE: Toxicity of pesticides to some aquatic animals-IX.
 Effect of pH values on toxicity
 AUTHOR(S): Nishiuchi, Yasuhiro
 CORPORATE SOURCE: Noyaka Kensasho, Kodaira, Japan
 SOURCE: Seitai Kagaku (1988), 9(3), 19-26
 CODEN: SKGKDR; ISSN: 0386-8141
 DOCUMENT TYPE: Journal
 LANGUAGE: Japanese
 AB The effect of pH (5.0-10.0) on the toxicity of pesticides (including 30 insecticides, 23 fungicides, 25 herbicides, 6 rodenticides, and 40 plant growth regulators and their prepsns. on the aquatic animal *Bufo bufo japonicus* was studied.
 IT 1071-83-6 1596-84-5
 RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
 (toxicity of, to *Bufo bufo japonicus*, pH effect on)

L36 ANSWER 35 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1988:544490 HCAPLUS
 DOCUMENT NUMBER: 109:144490
 TITLE: Synthesis, enzyme-substrate interaction and herbicidal activity of phosphoryl analogs of glycine

AUTHOR(S): Nachev, I.
 CORPORATE SOURCE: Res. Cent. Konstr. Polym., Sofia, 1528, Bulg.
 SOURCE: Liebigs Annalen der Chemie (1988), (9),
 861-7
 CODEN: LACHDL; ISSN: 0170-2041

DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 109:144490

AB The interactions of hydrophosphoryl [HP(O)=] compds. and
 1,3,5-triacetylhexahydro-1,3,5-triazine are studied to obtain the
 N-acetylated (aminomethyl)phosphoryl compds., which, upon acidic
 hydrolysis, lead to aminomethyl phosphine oxides and aminomethyl
 phosphinic and phosphonic acids. Strict selectivity is observed in the
 enzyme-catalyzed hydrolysis with the enzymes α -chymotrypsin,
 phosphodiesterase I, and alkaline phosphatase. Some of the synthesized
 materials exhibit **herbicidal** and antitumor activity.

IT **87-69-4D**, complexes **38641-94-0**

RL: AGR (Agricultural use); BAC (Biological activity or effector, except
 adverse); BSU (Biological study, unclassified); BIOL (Biological study);
 USES (Uses)
 (**herbicidal** activity of)

L36 ANSWER 36 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1988:70652 HCAPLUS

DOCUMENT NUMBER: 108:70652

TITLE: Phospholipid compositions and their use in pesticidal
 plant-protection spray mixtures

INVENTOR(S): Ghyczy, Miklos; Imberge, Paul Robert; Wendel, Armin

PATENT ASSIGNEE(S): Nattermann, A., und Cie. G.m.b.H., Fed. Rep. Ger.

SOURCE: U.S., 6 pp. Cont.-in-part of U.S. Ser. No. 508,662,
 abandoned.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4681617	A	19870721	US 1985-755967	19850717 <--
DE 3225703	C1	19840119	DE 1982-3225703	19820709 <--
			DE 1982-3225703	19820709
			US 1983-508662	19830628

PRIORITY APPLN. INFO.:

AB A phospholipid concentrate, suitable as an adjuvant for plant-protection sprays,
 comprises natural or synthetic phospholipid(s) 5-60, solvent 5-62.5,
 nonionic coemulsifier 3.3-30, and dissolving intermediates 3.3-35% by weight
 The phospholipids were phosphatidylcholine, phosphatidylethanolamine,
 N-acetyl phosphatidylethanolamine, phosphatidylinositol,
 phosphatidylserine, phosphatidylglycerol, phosphatidic acid. The solvents
 are DMSO, an alc., ether, and/or ketone. The coemulsifiers are fatty acid
 ethoxylates, hydrogenated castor oil or nonylphenol or fatty acid amides.
 The dissolving intermediates are sorbitan fatty acid esters, triglyceride
 or partial glyceride mixts. of saturated fatty acids, and hydroxy Et amides.
 A phospholipid concentrate comprised: phospholipid mixture 26.6, glycerol 10,
 isophorone 23.4, ethoxylated castor oil 3.3, sorbitan monopalmitate 3.3,
 H2O 13.4, vegetable oil 20% by weight The phospholipid mixture was made of
 phosphatidylcholine 42, phosphatidylethanolamine 25, N-
 acetylphosphatidylethanol amine 25 and other phosphatides 8%.

IT **1071-83-6**

RL: BIOL (Biological study)

(**herbicidal** sprays of, phospholipid concentrate adjuvants for)

IT **121-75-5**, Malathion

RL: BIOL (Biological study)
(insecticidal sprays, phospholipid concentrate adjuvants for)

L36 ANSWER 37 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1987:613541 HCAPLUS

DOCUMENT NUMBER: 107:213541

TITLE: Dose-mortality responses of crawfish and mosquitoes to selected pesticides

AUTHOR(S): Holck, A. R.; Meek, C. L.

CORPORATE SOURCE: Dep. Entomol., Louisiana State Univ., Baton Rouge, LA, 70803, USA

SOURCE: Journal of the American Mosquito Control Association (1987), 3(3), 407-11
CODEN: JAMAET; ISSN: 8756-971X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A study was conducted to determine the toxicities (LC50) of several pesticides on the com. important red swamp crawfish, *Procambarus clarkii*, and 3 mosquito species common in Louisiana ricelands, *Anopheles quadrimaculatus*, *Culex salinarius*, and *Psorophora columbiae*. Pesticides tested in laboratory bioassays included *Bacillus sphaericus*, *B. thuringiensis israelensis* (B.t.i), bendiocarb, **glyphosate**, isotearyl alc., malathion, propoxur, resmethrin synergized with piperonyl butoxide (PBO) and thioencarb. Isotearyl alc. was the least toxic compound to crawfish, with a LC50 of >10,000 ppm, while resmethrin + PBO (1:3 ratio) was the most toxic with a LC50 of 0.00082 ppm. The **herbicides glyphosate** and thioencarb were the least toxic compds. for the mosquito species tested, while B.t.i. and resmethrin + PBO were the most toxic.

IT 121-75-5, Cythion 1071-83-6, **Glyphosate**

RL: BIOL (Biological study)
(crawfish and mosquito sensitivity of)

L36 ANSWER 38 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1986:30456 HCAPLUS

DOCUMENT NUMBER: 104:30456

TITLE: Biocide composition

INVENTOR(S): Iwasaki, Tetsuji

PATENT ASSIGNEE(S): Kao Corp., Japan

SOURCE: Ger. Offen., 20 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 3513889	A1	19851024	DE 1985-3513889	19850417 <--
JP 60224606	A2	19851109	JP 1984-81538	19840423 <--
JP 01014883	B4	19890314		
GB 2157952	A1	19851106	GB 1985-9726	19850416 <--
GB 2157952	B2	19880608		
US 4976769	A	19901211	US 1989-423645	19891018 <--
US 5043008	A	19910827	US 1989-428072	19891025 <--
US 5198012	A	19930330	US 1991-703366	19910521 <--
US 5612322	A	19970318	US 1995-451187	19950526 <--
US 5654291	A	19970805	US 1995-451222	19950526 <--
US 5618802	A	19970408	US 1995-478265	19950607 <--
US 5627166	A	19970506	US 1995-478266	19950607 <--
US 5627167	A	19970506	US 1995-478267	19950607 <--
US 5656616	A	19970812	US 1995-478194	19950607 <--
US 5763462	A	19980609	US 1997-801164	19970218 <--

PRIORITY APPLN. INFO.:	JP 1984-81538	19840423
	US 1985-725028	19850419
	US 1987-42545	19870424
	US 1987-139720	19871230
	US 1989-418903	19891005
	US 1989-428072	19891025
	US 1993-166597	19931213
	US 1995-451187	19950526
	US 1995-478267	19950607

AB Alkyl, alkenyl, hydroxyalkyl, polyoxyalkylene alkyl ether, and polyoxyalkylene hydroxyalkyl ether phosphates, as well as similar phosphates, are activators for known pesticides. Thus, POE(3)-2-ethylhexyl phosphate [51325-10-1] enhanced the herbicidal activity of glyphosate [1071-83-6] against crabgrass, in pot expts.

IT 1071-83-6
 RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
 (herbicidal activity of, enhancement of, by phosphates)

IT 121-75-5
 RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
 (insecticidal activity of, enhancement of, by phosphate)

L36 ANSWER 39 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1985:449742 HCAPLUS
 DOCUMENT NUMBER: 103:49742
 TITLE: Pesticide mobility in fine calcareous loam
 AUTHOR(S): Hrlec, G.
 CORPORATE SOURCE: Fac. Agric. Sci., OOUR Inst. Plant Prot., Zagreb, Yugoslavia
 SOURCE: Zemljiste i Biljka (1984), 33(2), 189-93
 CODEN: ZMBLAP; ISSN: 0514-6658
 DOCUMENT TYPE: Journal
 LANGUAGE: Serbo-Croatian

AB Of 102 14C-labeled pesticides, p-nitrophenol [100-02-7], butocarboxim [34681-10-2], enolophosphate [470-90-6], and all nematocides showed highest mobility in columns of fine calcareous loam, an alkaline (pH 8.4 in water) Karst soil containing 80-89% CaCO₃, 4.5-9.0% clay, 1.4-1.8% organic matter, and >76% particles <0.05 mm. Some herbicides also showed a high mobility. Esters were sorbed, but products of their hydrolysis were highly mobile.

IT 121-75-5 1071-83-6 1596-84-5
 RL: PRP (Properties)
 (mobility of, in soil)

L36 ANSWER 40 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1984:403724 HCAPLUS
 DOCUMENT NUMBER: 101:3724
 TITLE: Effect of organophosphorus pesticides on Rhizobium and its symbiosis with alfalfa
 AUTHOR(S): Paromenskaya, L. N.; Kudryavtseva, G. N.
 CORPORATE SOURCE: VNII S-Kh. Mikrobiol., Pushkin, USSR
 SOURCE: Trudy Vsesoyuznogo Nauchno-Issledovatel'skogo Instituta Sel'skokhozyaistvennoi Mikrobiologii (1983), 52, 123-6
 CODEN: TISMAJ; ISSN: 0371-8034
 DOCUMENT TYPE: Journal
 LANGUAGE: Russian

AB When R. meliloti 425a was grown in the presence of various

organophosphorus insecticides (acetyllic, basudin, chlorophos, and carbofos) and herbicides (glyphosate and isophos-3), the latter 2 compds. were the most toxic, as they inhibited growth by 50% at concns. of 250 and 500 mg/L; the corresponding concentration for other pesticides was >1000 mg/L. All pesticides inhibited nitrogenase and N₂ fixation in both laboratory and field expts.; maximum inhibition of the nitrogenase system of *R. meliloti* was observed with actellic. Application of basudin in alfalfa-cultivated soil inhibited nitrogenase activity of root-nodule bacteria by .apprx.50% but stimulated the enzyme activity of the seedlings.

IT 121-75-5 1071-83-6

RL: BIOL (Biological study)

(nitrogen fixation by *Rhizobium meliloti* response to, alfalfa symbiosis in relation to)

L36 ANSWER 41 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1984:116116 HCAPLUS

DOCUMENT NUMBER: 100:116116

TITLE: Evaluation of potential embryotoxicity and teratogenicity of 42 herbicides, insecticides, and petroleum contaminants to mallard eggs

AUTHOR(S): Hoffman, David J.; Albers, Peter H.

CORPORATE SOURCE: Patuxent Wildlife Res. Cent., Fish and Wildlife Serv., Laurel, MD, 20708, USA

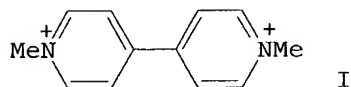
SOURCE: Archives of Environmental Contamination and Toxicology (1984), 13(1), 15-27

CODEN: AECTCV; ISSN: 0090-4341

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



AB The embryotoxicity of 42 environmental contaminants applied externally to mallard (*Anas platyrhynchos*) eggs including crude and refined petroleum, and com. formulations of herbicides and insecticides, are reported. Many of the petroleum pollutants were embryotoxic and moderately teratogenic and had LD50s of 0.3-5 µL/egg (.apprx.6-90 µg/g egg). The most toxic was a com. oil used for control or road dust followed by South Louisiana crude oil, Kuwait crude, number 2 fuel oil, bunker C fuel oil, and industrial and automotive waste oil. Prudhoe Bay crude, unused crankcase oil, aviation kerosine, and aliphatic hydrocarbon mixts. were less toxic (LD50s of 18 to >75 µL) and less teratogenic. The median lethal concns. (LC50s) of herbicides and insecticides in aqueous emulsion were measured by egg immersion; the most toxic were paraquat (I) [4685-14-7] and trifluralin [1582-09-8] (LC50s of .apprx.1.5 lbs/A; 1.7 kg/ha). Propanil [709-98-8], bromoxynil [1689-84-5] with MCPA [94-74-6], Me diclofop [51338-27-3], prometon [1610-18-0], endrin [72-20-8], sulprofos [35400-43-2], and parathion [56-38-2] were toxic (LC50s of 7-40 lbs/A; 7.8-44.8 kg/ha), whereas 2,4-D [94-75-7], glyphosate [1071-83-6], atrazine [1912-24-9], carbaryl [63-25-2], dalapon [75-99-0], dicamba [1918-00-9], methomyl [16752-77-5], and phosmet [732-11-6] were only slightly toxic or not toxic (LC50s of 178 to >500 lbs/A; 199-560 kg/ha). Pesticides in nontoxic oil vehicle applied by microliter pipet were up to 18 times more toxic than when applied in water vehicle, which was

probably due to better penetration of the pesticide past the eggshell and its membranes. Teratogenic effects and impaired embryonic growth are reported and results discussed in terms of potential hazard at field levels of application. A discussion is provided on the effects of pollutants on the eggs of other species of birds under laboratory and field conditions.

IT 121-75-5 1071-83-6

RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(embryotoxicity and teratogenicity of, in mallard)

L36 ANSWER 42 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1984:46478 HCAPLUS

DOCUMENT NUMBER: 100:46478

TITLE: A comparison of microbial bioassays for the detection of aquatic toxicants

AUTHOR(S): McFeters, Gordon A.; Bond, Pamela J.; Olson, Susan B.; Tchan, Y. T.

CORPORATE SOURCE: Dep. Microbiol., Montana State Univ., Bozeman, MT, 59717, USA

SOURCE: Water Research (1983), 17(12), 1757-62

CODEN: WATRAG; ISSN: 0043-1354

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Test chems. were analyzed using 2 microbial bioassay systems. The com. available Microtox Toxicity Analyzer System and the 2-organism procedure of Tchan (1977) were used to determine the concentration of test chems. resulting in

a

50% reduction in response. Both tests employed a luminescent bacterium (Photobacterium phosphorium) while the procedure of Tchan also utilized an alga (Dunaliella tertiolecta). Results from the 2 microbial tests were compared with available data obtained with fish toxicity bioassays and each other. The Microtox procedure was somewhat more sensitive than the Tchan bioassay in detecting most of the test chems. and fish bioassays were generally more sensitive than either of the microbial tests. As a notable exception, photosynthesis-inhibiting herbicides were detected at remarkably lower concns. with the procedure of Tchan than any of the other bioassays. Potential applications for these tests are discussed.

IT 121-75-5 38641-94-0

RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(toxicity of, microbial bioassays for)

L36 ANSWER 43 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1983:607720 HCAPLUS

DOCUMENT NUMBER: 99:207720

TITLE: Compatibility of Rhizobium japonicum with commercial pesticides in vitro

AUTHOR(S): Mallik, M. A. B.; Tesfai, K.

CORPORATE SOURCE: Agric. Res. Cent., Langston Univ., Langston, OK, 73050, USA

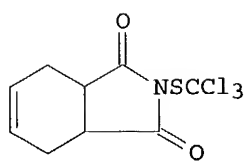
SOURCE: Bulletin of Environmental Contamination and Toxicology (1983), 31(4), 432-7

CODEN: BECTA6; ISSN: 0007-4861

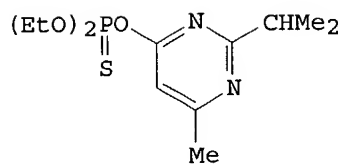
DOCUMENT TYPE: Journal

LANGUAGE: English

GI



I



II



III

AB Fungicides in order of increasing toxicity to 10 strains of *R. japonicum* were captan (I) [133-06-2], captafol [2425-06-1], thiram [137-26-8], mancozeb [8018-01-7], and carboxin [5234-68-4]. Fenaminosulf [140-56-7] and PCNB [82-68-8] were nontoxic to all the strains, even at the highest concentration tested. In order of increasing sensitivity, the strains were 3I1b143, 3I1b6, 3I1b144, 3I1b110, 10324, 3I1b122, 3I1b136, 11927, 3I1b142, and LU1. LU1 was highly sensitive to thiram and carboxin, but less sensitive to I than several other strains. Among the insecticides tested, diazinon (II) [333-41-5] was noninhibitory, carbaryl [63-25-2] produced an inhibition zone only at 250 µg/mL, and malathion [121-75-5] was inhibitory at all concns. tested. The herbicides alachlor (III) [15972-60-8] and trifluralin [1582-09-8] inhibited growth of all strains; while metribuzin [21087-64-9] was noninhibitory. Thus, different strains of *R. japonicum* differ in their sensitivity towards different pesticides. Therefore, strain selection for high tolerance to pesticides in the preparation of com. inoculant should be of practical interest to soybean growers.

IT 1071-83-6

RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(toxicity of, to *Rhizobium japonicum*)

IT 121-75-5

RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(toxicity of, to *Rhizobium japonicum*, strain in relation to)

L36 ANSWER 44 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1983:570991 HCAPLUS

DOCUMENT NUMBER: 99:170991

TITLE: Toxicity of formulated pesticides to some freshwater organisms. LXXXVI. Toxicity of agrochemicals in prawn *Penaeus japonicus*

AUTHOR(S): Nishiuchi, Yasuhiro; Asano, Kazuya

CORPORATE SOURCE: Norinsuisansho, Noyaku Kensasho, Japan

SOURCE: Suisan Zoshoku (1983), 30(4), 228-32

CODEN: SUZOAV; ISSN: 0371-4217

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB Toxicity of .apprx.40 pesticides (insecticides, germicides and herbicides) to *P. japonicus* in artificial and natural seawater and *Paratyia compressa* in well water were determined by measurement of their median lethal concns. (LC50) at 25°. In *P. japonicus*, the LC50 increased when sp. gr. of seawater was higher than standard seawater and decreased with increasing water temperature. The LC50 were lower in artificial seawater than in natural seawater.

IT 121-75-5 1071-83-6

RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)

(toxicity of, to *Paratya compressa* and *Penaeus japonicus*)

L36 ANSWER 45 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1983:156179 HCAPLUS

DOCUMENT NUMBER: 98:156179

TITLE: Further mutagenicity studies on pesticides in bacterial reversion assay systems

AUTHOR(S): Moriya, M.; Ohta, T.; Watanabe, K.; Miyazawa, T.; Kato, K.; Shirasu, Y.

CORPORATE SOURCE: Inst. Environ. Toxicol., Kodaira, 187, Japan

SOURCE: Mutation Research (1983), 116(3-4), 185-216

CODEN: MUREAV; ISSN: 0027-5107

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A total of 228 pesticides (88 insecticides, 60 fungicides, 62 herbicides, 12 plant-growth regulators, 3 metabolites, and 3 other compds.) were tested for mutagenicity in bacterial reversion-assay systems with 5 strains (TA 100, 98, 1535, 1537, and 1538) of *Salmonella typhimurium* and a strain (WP2 hcr) of *Escherichia coli*. Fifty pesticides (25 insecticides, 20 fungicides, 3 herbicides, 1 plant-growth regulator, and 1 other compound) were mutagenic, 5 of which required metabolic activation (S9 mix). Among various chemical groups, organic phosphates, halogenated alkanes, and dithiocarbamates had higher ratios of mutagens. Although 22 of the pesticides tested have been reported to be carcinogenic, 7 of them, i.e., captan [133-06-2], DBCP [96-12-8], EDB [106-93-4], EDC [107-06-2], ETU [96-45-7], HEH [109-84-2], and nitrofen [1836-75-5], were detected as mutagens. Most of the 15 nonmutagenic carcinogens were organochlorine pesticides such as α -BHC [319-84-6], chlorobenzilate [510-15-6], DDT [50-29-3], dieldrin [60-57-1] and quintozone [82-68-8].

IT 121-75-5 1071-83-6 1596-84-5

RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(mutagenicity of, in bacterial reversion assay)

L36 ANSWER 46 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1983:1536 HCAPLUS

DOCUMENT NUMBER: 98:1536

TITLE: Significance of plant metabolism in the mutagenicity and toxicity of pesticides

AUTHOR(S): Wildeman, Alan G.; Nazar, Ross N.

CORPORATE SOURCE: Dep. Bot. Genet., Univ. Guelph, Guelph, ON, N1G 2W1, Can.

SOURCE: Canadian Journal of Genetics and Cytology (1982), 24(4), 437-49

CODEN: CNJGA8; ISSN: 0008-4093

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The mutagenicity of an assortment of agricultural pesticide prepsns. in the *Salmonella* bioassay was evaluated using both rat liver S9 and plant enzyme homogenates as activating systems. The plant metabolism can alter the results of this short-term mutagenicity test: some compds. which are nonmutagenic in the *Salmonella* bioassay (e.g., diquat [85-00-7]) give pos. responses, some prepsns. such as captan [133-06-2] become more or less mutagenic, and some, such as triallate [2303-17-5], become significantly more toxic to the tester strains. Furthermore, dose response curves suggest that even when both plant homogenates and rat liver S9 supernatant activate a compound, the mutagens which are formed may differ. Five-day old alfalfa, corn, bean, pea, sunflower, tobacco, and wheat were tested and compared as activating systems; these were prepared by an assortment of cell disruption techniques including blending, homogenizing, sonication, and high pressure disruption methods. For routine testing, filter sterilized, blended, S14 supernatants of corn or wheat were the most promising. No correlation was

observed between levels of activation by the various plant species and their protein contents, catalase, or peroxidase activities. The preps., however, could be standardized using specific chemical compds. in the bioassay.

IT 121-75-5 1071-83-6

RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(mutagenicity of, Salmonella assay for, liver and plant activating system in relation to)

L36 ANSWER 47 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1981:581948 HCAPLUS

DOCUMENT NUMBER: 95:181948

TITLE: Evaluation of the effect of pesticides on some aquatic organisms I. Effect of pesticides on some aquatic insects

AUTHOR(S): Nishiuchi, Yuji

CORPORATE SOURCE: Agric. Chem. Inspect. Stn., Minist. Agric. For. Fish.,
Kodaira, Japan

SOURCE: Seitai Kagaku (1981), 4(2), 31-46
CODEN: SKGKDR; ISSN: 0386-8141

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB Pesticides (insecticides, germicides, **herbicides**) were tested against the nontarget aquatic insects *Sigara substriata*, *Micronecta sedula*, *Cloeon dipterum*, *Orthetrum albistylum speciosum*, *Sympetrum frequens*, *Eretes sticticus* and *Notonecta triguttata*, and 48 h-median tolerant limits at 25° were tabulated.

IT 121-75-5 1071-83-6

RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(toxicity of, to nontarget aquatic insects)

L36 ANSWER 48 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1981:26133 HCAPLUS

DOCUMENT NUMBER: 94:26133

TITLE: Residue analyses of the official testing of pesticides 1979

AUTHOR(S): Siltanen, Hilikka; Rosenberg, Christina

CORPORATE SOURCE: State Inst. Agric. Chem., Helsinki, SF-00171, Finland

SOURCE: Publications of the State Institute of Agricultural Chemistry (Finland) (1980), 17, 61 pp.
CODEN: SCPUA9; ISSN: 0370-9167

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A tabulation is given of residues of insecticides (cypermethrin [52315-07-8], decamethrin [52918-63-5], fenvalerate [51630-58-1], malathion [121-75-5], oxamyl [23135-22-0], and pyrethrins), fungicides (anilazine [101-05-3], benomyl [17804-35-2], etc.), **herbicides** (benazolin [3813-05-6], bromoxynil [1689-84-5], etc.) and plant growth regulators (ethephon [16672-87-0] and mepiquat [15302-91-7]) in soil and crops (cabbage, sugar beet, etc.). Determination methods are listed.

IT 121-75-5 1071-83-6

RL: BIOL (Biological study)
(of soil and crops)

L36 ANSWER 49 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1979:85431 HCAPLUS

DOCUMENT NUMBER: 90:85431

TITLE: Residue analyses of the official testing of pesticides

AUTHOR(S): Siltanen, Hilikka; Rosenberg, Christina

CORPORATE SOURCE: State Inst. Agric. Chem., Helsinki, Finland

SOURCE: Publications of the State Institute of Agricultural

Chemistry (Finland) (1978), Volume Date
1977, 15, 69 pp.
CODEN: SCPUA9; ISSN: 0370-9167

DOCUMENT TYPE:

Journal

LANGUAGE:

English

AB Amts. of residue of each of 12 insecticides, 16 fungicides, 24 herbicides, and 1 plant growth regulator, which remained in the edible portion of various crops on recommended harvest dates were determined; results are tabulated for the amount of residue, crop, soil type, application rate, date of application, date of harvest, and days from last application to anal. Oxamyl [23135-22-0] was determined by gas chromatog. after alkaline hydrolysis to the oxime, after extraction into CH₂Cl₂ or CH₂Cl₂-Me₂CO, with 5% DC-200 + 7.6% QF-1 on Varaport 3 with electron-capture or flame-ionization detection, and N carrier gas. Chloramben [133-90-4] was determined by gas chromatog. of the Me ester by using an electron-capture detector, St-30 coated glass capillary column, and N carrier gas; samples were extracted with alkaline MeOH. Referenced methods were used for the other pesticides; deviations from published extraction and cleanup procedures are given in detail.

IT 121-75-5 1071-83-6

RL: BIOL (Biological study)
(of food crops, of Finland)

L36 ANSWER 50 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1978:89838 HCAPLUS

DOCUMENT NUMBER: 88:89838

TITLE: N-Phosphonomethylglycine derivatives with phytotoxic use

INVENTOR(S): Gaertner, Van Russell

PATENT ASSIGNEE(S): Monsanto Co., USA

SOURCE: Ger. Offen., 60 pp.

CODEN: GWXXBX

DOCUMENT TYPE:

Patent

LANGUAGE:

German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

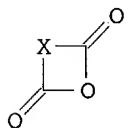
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US 4197254	A	19800408	US 1976-682243	19760503 <--
NL 7704710	A	19771107	NL 1977-4710	19770429 <--
ES 458316	A1	19780301	ES 1977-458316	19770429 <--
SU 665776	D	19790530	SU 1977-2476270	19770429 <--
HU 27307	O	19831028	HU 1977-M0981	19770429 <--
HU 184174	B	19840730		
RO 72258	P	19820909	RO 1977-90201	19770430 <--
BE 854167	A1	19771103	BE 1977-177184	19770502 <--
FI 7701387	A	19771104	FI 1977-1387	19770502 <--
FI 62842	B	19821130		
FI 62842	C	19830310		
DK 7701918	A	19771104	DK 1977-1918	19770502 <--
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NO 153369	B	19851125		
NO 153369	C	19860305		
JP 52133928	A2	19771109	JP 1977-50051	19770502 <--
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FR 2350352	A1	19771202	FR 1977-13245	19770502 <--
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BR 7702814	A	19780328	BR 1977-2814	19770502 <--
ZA 7702622	A	19780329	ZA 1977-2622	19770502 <--
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AU 7724756	A1	19781109	AU 1977-24756	19770502 <--
AU 510033	B2	19800605		
GB 1532329	A	19781115	GB 1977-18237	19770502 <--
AT 7703084	A	19790115	AT 1977-3084	19770502 <--
AT 351860	B	19790827		
CS 193093	P	19790917	CS 1977-2861	19770502 <--
PL 106810	P	19800131	PL 1977-209094	19770502 <--
CA 1085405	A1	19800909	CA 1977-277575	19770502 <--
IL 51987	A1	19810913	IL 1977-51987	19770502 <--
SE 7705110	A	19771104	SE 1977-5110	19770503 <--
SE 431213	B	19840123		
SE 431213	C	19840503		
CH 628905	A	19820331	CH 1977-5503	19770503 <--
SU 680651	D	19790815	SU 1977-2518656	19770908 <--
AT 7801423	A	19790415	AT 1978-1423	19780228 <--
AT 353284	B	19791112		
US 4251257	A	19810217	US 1979-67252	19790817 <--
SE 8004235	A	19800606	SE 1980-4235	19800606 <--
SE 439417	B	19850617		
SE 439417	C	19850926		

PRIORITY APPLN. INFO.:

US 1976-682243	19760503
AT 1977-3084	19770502

GI



II

AB The title compds., RO₂CCH₂N[CH₂P(O)(OH)(OR₁)]COXCO₂R₁ [I, R = H, alkyl, alkali metal; R₁ = H, alkali metal, X = vinylene, methylvinylene, alkylene, phenylene, substituted phenylene, cycloalkylene, dicarboxycycloalkylene, norbornylene, N-methylpyrrolylidene, pyridylidene, picolylidene, thienylidene] were prepared by acylation of RO₂CCH₂NHCH₂P(O)(OH)₂ with anhydrides II. Thus, 0.1 mol HO₂CCH₂NHCH₂P(O)(OH)₂ in 30 mL H₂O was treated with 0.2 mol of 50% aqueous NaOH followed by 0.125 mol phthalic anhydride to give HO₂CCH₂N[CH₂P(O)(OH)₂]COC₆H₄CO₂H-o (III). Among the 20 I prepared were (R, R₁, X, given): H, H, CH₂CH₂; H, H, 1,2-cyclobutylidene; H, H, CH₂CMe₂CH₂; Et, H, CH₂CHMe. Extensive data were given for the effectiveness of I against 20 plants. Thus, after 2 wks at 11.2 kg/ha I killed thistle, Chenopodium album, Polygonum, and couch grass.

IT 108-30-5, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(acylation of phosphonomethylglycine by)

IT 1071-83-6

RL: RCT (Reactant); RACT (Reactant or reagent)
(acylation of, with anhydrides)

L36 ANSWER 51 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1977:546539 HCAPLUS

DOCUMENT NUMBER: 87:146539

TITLE: A rapid bioassay for pesticide phytotoxicity

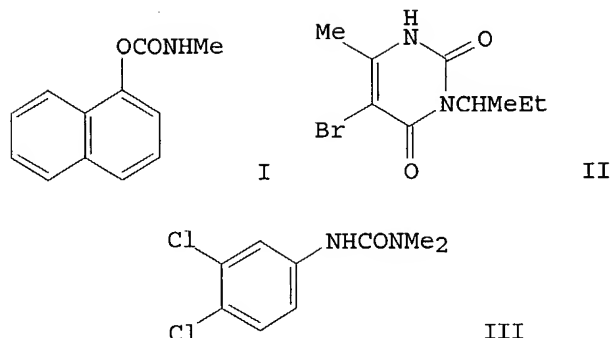
AUTHOR(S): Pool, Robert A. F.

CORPORATE SOURCE: California Dep. Food Agric., Sacramento, CA, USA

SOURCE: Journal of Agricultural and Food Chemistry (1977), 25(5), 1216-18

DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI

CODEN: JAFCAU; ISSN: 0021-8561



AB A simple, efficient in vivo bioassay for small quantities of potentially phytotoxic material involved hypodermic infusion of leaves to irrigate relatively undisturbed leaf mesophyll and parenchyma cells with com. grade of **herbicides**, fungicides, and insecticides; after exposure to light, the leaves were tested for inhibition of starch production The fungicides benomyl [17804-35-2], captan [133-06-2], and maneb [12427-38-2] were not phytotoxic at 1000 ppm, while karathane [39300-45-3] strongly inhibited starch production at this concentration All liquid insecticides tested were

strongly phytotoxic, possibly due to the petroleum carrier. The wettable powder carbaryl (I) [63-25-2] was slightly toxic at 100 ppm and significantly toxic at higher concns. Both bromacil (II) [314-40-9] and diuron (III) [330-54-1] showed slight phytotoxicity at a concentration as low as 0.1 ppm.

IT 121-75-5 1071-83-6
 RL: PRP (Properties)
 (phytotoxicity of)

L36 ANSWER 52 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1977:70230 HCAPLUS
 DOCUMENT NUMBER: 86:70230
 TITLE: Investigations on pesticide residues 1975
 AUTHOR(S): Siltanen, Hilikka; Rosenberg, Christina
 CORPORATE SOURCE: State Inst. Agric. Chem., Finland
 SOURCE: Publications of the State Institute of Agricultural Chemistry (Finland) (1976), Volume Date 1975, 11, 63 pp.

CODEN: SCPUA9; ISSN: 0370-9167
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Detailed anal. methods are given which were used to determine residues of 50 pesticides on crops of Finland grown in 1975. Tabulations give the specific crop, soil on which they were grown, amount and dose rate of pesticide applied, manner of application, amount of pesticide present at harvest date, interval from last application to harvest and to residue determination, and amount of residue found.

IT 1071-83-6 1596-84-5
 RL: BIOL (Biological study)
 (of crops, of Finland)

L36 ANSWER 53 OF 53 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1976:145655 HCAPLUS
 DOCUMENT NUMBER: 84:145655
 TITLE: Investigations on pesticide residues, 1974
 AUTHOR(S): Siltanen, Hilka; Rosenberg, Christina
 CORPORATE SOURCE: State Inst. Agric. Chem., Helsinki, Finland
 SOURCE: Publications of the State Institute of Agricultural
 Chemistry (Finland) (1975), Volume Date
 1974, 10, 59 pp.
 CODEN: SCPUA9; ISSN: 0370-9167
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Pesticide residues in a variety of fruits, vegetables, and cereals were
 determined in Finland in 1974. The levels and anal. methods used are reported
 for insecticides, fungicides, **herbicides**, and plant growth
 regulators.
 IT 121-75-5 1071-83-6
 RL: BIOL (Biological study)
 (residues of, in crop plants)

=> select hit rn l35 1-53
 E17 THROUGH E42 ASSIGNED

=> fil reg
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L37 ANSWER 1 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 143375-68-2 REGISTRY
 CN Reductase, glyphosate (9CI) (CA INDEX NAME)
 OTHER NAMES:
 CN Glyphosate oxidoreductase
 CN Glyphosate reductase
 MF Unspecified
 CI MAN
 SR CA
 LC STN Files: AGRICOLA, BIOBUSINESS, BIOSIS, CA, CAPLUS, TOXCENTER, USPAT2, USPATFULL
 DT.CA Caplus document type: Journal; Patent
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); USES (Uses)
 RL.NP Roles from non-patents: BIOL (Biological study); OCCU (Occurrence)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
 37 REFERENCES IN FILE CA (1907 TO DATE)
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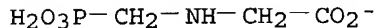
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 REFERENCE 4: 139:129160
 REFERENCE 5: 139:68069
 REFERENCE 6: 139:1978
 REFERENCE 7: 138:250703
 REFERENCE 8: 138:148756
 REFERENCE 9: 138:118540
 REFERENCE 10: 138:118539

L37 ANSWER 2 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 81591-81-3 REGISTRY
 CN Glycine, N-(phosphonomethyl)-, ion(1-), trimethylsulfonium (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Sulfonium, trimethyl-, salt with N-(phosphonomethyl)glycine (1:1) (9CI)
 OTHER NAMES:
 CN Avans 330
 CN Glyphosate mono(trimethylsulfonium) salt
 CN Glyphosate trimethylsulfonium salt
 CN Glyphosate-trimesium
 CN ICIA 0224
 CN Medallon
 CN N-Phosphonomethylglycine monotrimethylsulfonium salt
 CN Ouragan
 CN SC 0224
 CN Sulfosate
 CN Touchdown
 CN Trimethylsulfonium glyphosate
 DR 171667-09-7, 133000-38-1, 134123-46-9, 97626-33-0, 99534-06-2,

114416-13-6, 144236-63-5, 152969-57-8, 90891-17-1, 87090-28-6, 88426-50-0,
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CHEMLIST, CIN, MRCK*, PROMT, TOXCENTER, ULIDAT, USPAT2, USPATFULL
(*File contains numerically searchable property data)
DT.CA CAplus document type: Conference; Dissertation; Journal; Patent
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); PROC
(Process); USES (Uses)
RLD.P Roles for non-specific derivatives from patents: BIOL (Biological
study); PRP (Properties); USES (Uses)
RL.NP Roles from non-patents: BIOL (Biological study); OCCU (Occurrence);
PROC (Process); PRP (Properties); USES (Uses)

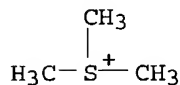
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CRN 81591-80-2
CMF C3 H7 N O5 P



CM 2

CRN 676-84-6
CMF C3 H9 S



260 REFERENCES IN FILE CA (1907 TO DATE)
45 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
260 REFERENCES IN FILE CAPLUS (1907 TO DATE)

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REFERENCE 2: 140:199329
REFERENCE 3: 140:159049
REFERENCE 4: 140:159047
REFERENCE 5: 140:124047
REFERENCE 6: 140:89300
REFERENCE 7: 140:72560
REFERENCE 8: 140:787
REFERENCE 9: 139:392480
REFERENCE 10: 139:376651

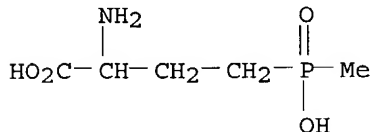
L37 ANSWER 3 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN
RN 77182-82-2 REGISTRY

CN Butanoic acid, 2-amino-4-(hydroxymethylphosphinyl)-, monoammonium salt
(9CI) (CA INDEX NAME)

OTHER NAMES:

CN Ammonium glufosinate
CN Basta
CN Basta Fl
CN Basta LS
CN Buster
CN Dash
CN Finale
CN Finale 14SL
CN Glufosinate monoammonium salt
CN Glufosinate-ammonium
CN HOE 00661
CN HOE 39866
CN Ignite
CN Liberty
CN Liberty (pesticide)
DR 82785-28-2, 106917-54-8, 118336-14-4
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LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, CA, CABA,
CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, CSNB,
DIOGENES, HSDB*, MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*,
SPECINFO, TOXCENTER, ULIDAT, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA CAPLUS document type: Conference; Dissertation; Journal; Patent
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study);
PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES
(Uses)
RLD.P Roles for non-specific derivatives from patents: BIOL (Biological
study); PROC (Process); USES (Uses)
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological
study); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP
(Properties); USES (Uses)
CRN (51276-47-2)



● NH₃

353 REFERENCES IN FILE CA (1907 TO DATE)
42 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
354 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 141:22570
REFERENCE 2: 140:405748
REFERENCE 3: 140:403529
REFERENCE 4: 140:387272

REFERENCE 5: 140:374059
 REFERENCE 6: 140:315865
 REFERENCE 7: 140:298908
 REFERENCE 8: 140:248740
 REFERENCE 9: 140:248739
 REFERENCE 10: 140:248665

L37 ANSWER 4 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 69254-40-6 REGISTRY
 CN Glycine, N-(phosphonomethyl)-, diammonium salt (9CI) (CA INDEX NAME)
 OTHER NAMES:
 CN Diammonium glyphosate
 CN Glyphosate diammonium salt
 CN N-Phosphomethylglycine diammonium salt
 CN Touchdown iQ
 MF C3 H8 N O5 P . 2 H3 N
 LC STN Files: CA, CAPLUS, IFICDB, IFIPAT, IFIUDB, TOXCENTER, USPATFULL
 DT.CA Caplus document type: Journal; Patent
 RL.P Roles from patents: BIOL (Biological study); USES (Uses)
 RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); USES (Uses)
 RL.NP Roles from non-patents: BIOL (Biological study); USES (Uses)
 CRN (1071-83-6)



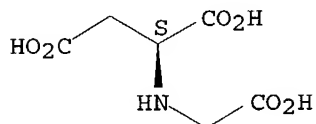
● 2 NH₃

19 REFERENCES IN FILE CA (1907 TO DATE)
 3 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 19 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 141:2855
 REFERENCE 2: 140:230950
 REFERENCE 3: 140:159049
 REFERENCE 4: 140:37380
 REFERENCE 5: 139:241614
 REFERENCE 6: 138:380839
 REFERENCE 7: 138:350016
 REFERENCE 8: 138:68332
 REFERENCE 9: 138:51349
 REFERENCE 10: 138:1333

L37 ANSWER 5 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 41035-84-1 REGISTRY
 CN L-Aspartic acid, N-(carboxymethyl)- (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Aspartic acid, N-(carboxymethyl)-, L- (7CI)
 OTHER NAMES:
 CN N-(Carboxymethyl)-L-aspartic acid
 CN N-(Carboxymethyl)aminosuccinic acid
 CN N-(Carboxymethyl)asparaginic acid
 CN N-(Carboxymethyl)aspartic acid
 FS STEREOSEARCH
 DR 61754-63-0
 MF C6 H9 N O6
 CI COM
 LC STN Files: BEILSTEIN*, CA, CAOLD, CAPLUS, CASREACT, CHEMLIST, IFICDB,
 IFIPAT, IFIUDB, TOXCENTER, USPAT2, USPATFULL
 (*File contains numerically searchable property data)
 DT.CA CAPLUS document type: Journal; Patent
 RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); PROC
 (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
 RLD.P Roles for non-specific derivatives from patents: BIOL (Biological
 study); PREP (Preparation); PRP (Properties); USES (Uses)
 RL.NP Roles from non-patents: BIOL (Biological study); PREP (Preparation);
 PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES
 (Uses)
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical
 study); FORM (Formation, nonpreparative); PREP (Preparation); PROC
 (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

73 REFERENCES IN FILE CA (1907 TO DATE)
 27 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 73 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 140:176897
 REFERENCE 2: 140:65297
 REFERENCE 3: 140:65296
 REFERENCE 4: 139:401493
 REFERENCE 5: 138:173659
 REFERENCE 6: 137:255236
 REFERENCE 7: 137:13563

REFERENCE 8: 136:347296

REFERENCE 9: 136:39159

REFERENCE 10: 135:378687

L37 ANSWER 6 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN

RN 40465-76-7 REGISTRY

CN Glycine, N-(phosphonomethyl)-, compd. with 2-aminoethanol (1:1) (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Ethanol, 2-amino-, compd. with N-(phosphonomethyl)glycine (1:1) (9CI)

OTHER NAMES:

CN Glyphosate monoethanolamine salt

CN Glyphosate monoethanolammonium salt

CN Monoethanolamine glyphosate

CN N-Phosphonomethylglycine monoethanolamine salt

MF C3 H8 N O5 P . C2 H7 N O

CI COM

LC STN Files: CA, CAPLUS, IFICDB, IFIPAT, IFIUDB, TOXCENTER, USPAT2, USPATFULL

DT.CA CAPLUS document type: Journal; Patent

RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); USES (Uses)

RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); USES (Uses)

RL.NP Roles from non-patents: BIOL (Biological study); OCCU (Occurrence)

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CRN 1071-83-6

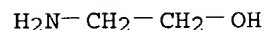
CMF C3 H8 N O5 P



CM 2

CRN 141-43-5

CMF C2 H7 N O



24 REFERENCES IN FILE CA (1907 TO DATE)

4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

24 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 140:298908

REFERENCE 2: 138:380839

REFERENCE 3: 138:350016

REFERENCE 4: 138:51349

REFERENCE 5: 138:1333

REFERENCE 6: 137:197001
 REFERENCE 7: 136:258721
 REFERENCE 8: 136:1862
 REFERENCE 9: 134:262326
 REFERENCE 10: 134:218319

L37 ANSWER 7 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 40465-66-5 REGISTRY
 CN Glycine, N-(phosphonomethyl)-, monoammonium salt (9CI) (CA INDEX NAME)
 OTHER NAMES:
 CN Ammonium glyphosate
 CN Glyphosate monoammonium salt
 CN MON 14420
 CN MON 8750
 CN Monoammonium glyphosate
 CN N-Phosphonomethylglycine amine salt
 CN N-Phosphonomethylglycine ammonium salt
 CN N-Phosphonomethylglycine monoammonium salt
 CN Roundup PRODry
 MF C3 H8 N O5 P . H3 N
 CI COM
 LC STN Files: AGRICOLA, BIOBUSINESS, CA, CAPLUS, CASREACT, IFICDB, IFIPAT, IFIUDB, TOXCENTER, USPAT2, USPATFULL
 DT.CA Caplus document type: Journal; Patent
 RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
 RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); PRP (Properties); USES (Uses)
 RL.NP Roles from non-patents: BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); USES (Uses)
 CRN (1071-83-6)



88 REFERENCES IN FILE CA (1907 TO DATE)
 11 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 88 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 140:401765
 REFERENCE 2: 140:298908
 REFERENCE 3: 140:248738
 REFERENCE 4: 140:248737
 REFERENCE 5: 140:248666
 REFERENCE 6: 140:230950

REFERENCE 7: 140:159049

REFERENCE 8: 140:124050

REFERENCE 9: 140:106970

REFERENCE 10: 139:392521

L37 ANSWER 8 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN

RN 39600-42-5 REGISTRY

CN Glycine, N-(phosphonomethyl)-, monopotassium salt (9CI) (CA INDEX NAME)

OTHER NAMES:

CN Glyphosate monopotassium salt

CN N-Phosphonomethylglycine monopotassium salt

MF C3 H8 N O5 P . K

CI COM

LC STN Files: CA, CAPLUS, CASREACT, IFICDB, IFIPAT, IFIUDB, TOXCENTER, USPAT2, USPATFULL

DT.CA Caplus document type: Journal; Patent

RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); USES (Uses)

RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); USES (Uses)

RL.NP Roles from non-patents: BIOL (Biological study); USES (Uses)

CRN (1071-83-6)

HO₂C-CH₂-NH-CH₂-PO₃H₂

● K

16 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

16 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 140:401765

REFERENCE 2: 140:248666

REFERENCE 3: 136:397312

REFERENCE 4: 134:262326

REFERENCE 5: 133:70199

REFERENCE 6: 133:1753

REFERENCE 7: 131:195768

REFERENCE 8: 127:244291

REFERENCE 9: 120:271183

REFERENCE 10: 113:36393

L37 ANSWER 9 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN

RN 38641-94-0 REGISTRY

CN Glycine, N-(phosphonomethyl)-, compd. with 2-propanamine (1:1) (9CI) (CA

INDEX NAME)

OTHER CA INDEX NAMES:

CN 2-Propanamine, compd. with N-(phosphonomethyl)glycine (1:1) (9CI)

OTHER NAMES:

CN Azural AT
 CN Buggy
 CN Fosulen
 CN Glyphosate isopropylamine
 CN Glyphosate isopropylamine salt
 CN Glyphosate mono(isopropylamine) salt
 CN MON 0139
 CN MON 39
 CN N-(Phosphonomethyl)glycine isopropylamine salt
 CN N-(Phosphonomethyl)glycine isopropylammonium salt
 CN N-(Phosphonomethyl)glycine monoisopropylamine salt
 CN Nitosorg
 CN Rodeo
 CN Ron-do
 CN Roundup
 CN Roundup Custom
 CN Roundup Ultra
 CN Roundup UltraMax
 CN Utal
 CN Utal (herbicide)
 CN Vision
 CN Vision (herbicide)
 DR 626231-43-4, 96638-41-4, 96639-11-1, 106805-61-2, 39226-77-2, 258263-91-1
 MF C3 H9 N . C3 H8 N O5 P
 CI COM
 LC STN Files: AGRICOLA, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO,
 CA, CABA, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM,
 CSNB, EMBASE, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MRCK*, MSDS-OHS,
 NIOSHTIC, PIRA, PROMT, RTECS*, TOXCENTER, ULIDAT, USPAT2, USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 DT.CA Caplus document type: Conference; Dissertation; Journal; Patent; Report
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study);
 MSC (Miscellaneous); PREP (Preparation); PROC (Process); PRP
 (Properties); RACT (Reactant or reagent); USES (Uses)
 RLD.P Roles for non-specific derivatives from patents: BIOL (Biological
 study); PRP (Properties); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological
 study); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC
 (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
 RLD.NP Roles for non-specific derivatives from non-patents: BIOL (Biological
 study); PREP (Preparation)

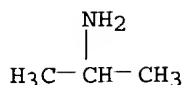
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CRN 1071-83-6
 CMF C3 H8 N O5 P



CM 2

CRN 75-31-0
 CMF C3 H9 N



839 REFERENCES IN FILE CA (1907 TO DATE)
44 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
840 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 140:401599
REFERENCE 2: 140:388731
REFERENCE 3: 140:387285
REFERENCE 4: 140:351999
REFERENCE 5: 140:326403
REFERENCE 6: 140:298908
REFERENCE 7: 140:252989
REFERENCE 8: 140:248745
REFERENCE 9: 140:248740
REFERENCE 10: 140:248739

L37 ANSWER 10 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN
RN 34494-04-7 REGISTRY
CN Glycine, N-(phosphonomethyl)-, compd. with N-methylmethanamine (1:1) (9CI)
(CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Methanamine, N-methyl-, compd. with N-(phosphonomethyl)glycine (1:1) (9CI)
OTHER NAMES:
CN Glyphosate dimethylamine salt
CN Glyphosate mono(dimethylamine) salt
CN Glyphosate mono(dimethylammonium) salt
CN MON 0468
CN Mono(dimethylammonium) N-(phosphonomethyl)glycine
CN N-(Phosphonomethyl)glycine dimethylamine salt
CN N-(Phosphonomethyl)glycine mono(dimethylamine) salt
CN N-(Phosphonomethyl)glycine mono(dimethylammonium) salt
MF C3 H8 N O5 P . C2 H7 N
LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT, IFICDB, IFIPAT, IFIUDB,
TOXCENTER, USPATFULL
(*File contains numerically searchable property data)
DT.CA Caplus document type: Journal; Patent
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); USES
(Uses)
RLD.P Roles for non-specific derivatives from patents: BIOL (Biological
study); USES (Uses)
RL.NP Roles from non-patents: BIOL (Biological study); PRP (Properties); USES
(Uses)

CM 1

CRN 1071-83-6
CMF C3 H8 N O5 P



CM 2

CRN 124-40-3

CMF C2 H7 N



25 REFERENCES IN FILE CA (1907 TO DATE)
 3 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 25 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 140:298908

REFERENCE 2: 136:258726

REFERENCE 3: 134:262326

REFERENCE 4: 134:218319

REFERENCE 5: 133:330917

REFERENCE 6: 133:330916

REFERENCE 7: 133:330915

REFERENCE 8: 131:195768

REFERENCE 9: 127:2034

REFERENCE 10: 123:199404

L37 ANSWER 11 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN

RN 34494-03-6 REGISTRY

CN Glycine, N-(phosphonomethyl)-, monosodium salt (9CI) (CA INDEX NAME)

OTHER NAMES:

CN Glyphosate monosodium salt

CN MON 0459

CN N-Phosphonomethylglycine monosodium salt

CN N-Phosphonomethylglycine sodium salt

MF C3 H8 N O5 P . Na

CI COM

LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT, CHEMLIST, IFICDB, IFIPAT, IFIUDB, RTECS*, TOXCENTER, USPATFULL

(*File contains numerically searchable property data)

DT.CA Caplus document type: Journal; Patent

RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)

RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); PRP (Properties); USES (Uses)

RL.NP Roles from non-patents: BIOL (Biological study); USES (Uses)

CRN (1071-83-6)



● Na

33 REFERENCES IN FILE CA (1907 TO DATE)
7 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
33 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 140:401765

REFERENCE 2: 139:96532

REFERENCE 3: 138:51349

REFERENCE 4: 136:397312

REFERENCE 5: 136:258721

REFERENCE 6: 136:1862

REFERENCE 7: 134:262326

REFERENCE 8: 134:218330

REFERENCE 9: 131:296512

REFERENCE 10: 131:253672

L37 ANSWER 12 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN

RN 9002-02-2 REGISTRY

CN Dehydrogenase, succinate (9CI) (CA INDEX NAME)

OTHER NAMES:

CN Coenzyme B/coenzyme M-dependent fumarate reductase

CN E.C. 1.3.99.1

CN SDH

CN Succinate dehydrogenase

CN Succinate oxidoreductase

CN Succinic acid dehydrogenase

CN Succinic dehydrogenase

CN Succinodehydrogenase

CN Succinyl dehydrogenase

MF Unspecified

CI MAN

LC STN Files: AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CAPLUS, CASREACT, CSNB, EMBASE, MEDLINE, NIOSHTIC, PIRA, PROMT, TOXCENTER, USPAT2, USPATFULL

DT.CA Caplus document type: Book; Conference; Dissertation; Journal; Patent; Report

RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); USES (Uses); NORL (No role in record)

RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); PREP (Preparation); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: BIOL (Biological

study); FORM (Formation, nonpreparative); PROC (Process); PRP
(Properties)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

11817 REFERENCES IN FILE CA (1907 TO DATE)

11 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

11822 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 141:21370

REFERENCE 2: 141:20974

REFERENCE 3: 141:18004

REFERENCE 4: 141:5098

REFERENCE 5: 141:3941

REFERENCE 6: 141:3304

REFERENCE 7: 140:421496

REFERENCE 8: 140:421117

REFERENCE 9: 140:420901

REFERENCE 10: 140:418832

L37 ANSWER 13 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN

RN 6915-15-7 REGISTRY

CN Butanedioic acid, hydroxy- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Malic acid (8CI)

OTHER NAMES:

CN (+)-Malic acid

CN α -Hydroxysuccinic acid

CN 2-Hydroxybutanedioic acid

CN 2-Hydroxyethane-1,2-dicarboxylic acid

CN 2-Hydroxysuccinic acid

CN Deoxytetraric acid

CN dl-Malic acid

CN DL-Malic acid

CN E 296

CN FDA 2018

CN Hydroxybutanedioic acid

CN Hydroxysuccinic acid

CN Musashi-no-Ringoson

CN NSC 25941

CN Pomalus Acid

CN R,S(+)-Malic acid

FS 3D CONCORD

DR 623158-98-5, 617-48-1, 41308-42-3

MF C4 H6 O5

CI COM

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS,
BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,
CHEMINFORMRX, CHEMLIST, CIN, CSCHM, DDFU, DETHERM*, DIOGENES, DIPPR*,
DRUGU, EMBASE, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA,
MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, PS,
RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, USAN, USPAT2, USPATFULL,
VETU, VTB

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

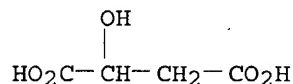
DT.CA CAPLUS document type: Book; Conference; Dissertation; Journal; Patent; Report

RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

18053 REFERENCES IN FILE CA (1907 TO DATE)

730 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

18081 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 141:31083

REFERENCE 2: 141:28754

REFERENCE 3: 141:28686

REFERENCE 4: 141:28647

REFERENCE 5: 141:28646

REFERENCE 6: 141:28214

REFERENCE 7: 141:27375

REFERENCE 8: 141:27231

REFERENCE 9: 141:27213

REFERENCE 10: 141:26982

L37 ANSWER 14 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN

RN 5138-18-1 REGISTRY

CN Butanedioic acid, sulfo- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

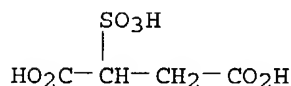
CN Succinic acid, sulfo- (6CI, 7CI, 8CI)

OTHER NAMES:

CN 2-Sulfosuccinic acid

CN Sulfosuccinic acid

FS 3D CONCORD
 DR 55904-24-0, 181719-29-9
 MF C4 H6 O7 S
 CI COM
 LC STN Files: BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CAOLD,
 CAPLUS, CASREACT, CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DRUGU, EMBASE,
 GMELIN*, IFICDB, IFIPAT, IFIUDB, MEDLINE, PROMT, TOXCENTER, USPAT2,
 USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: EINECS**, NDSL**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 DT.CA Caplus document type: Conference; Dissertation; Journal; Patent; Report
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study);
 PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or
 reagent); USES (Uses); NORL (No role in record)
 RLD.P Roles for non-specific derivatives from patents: ANST (Analytical
 study); BIOL (Biological study); MSC (Miscellaneous); OCCU (Occurrence);
 PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or
 reagent); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological
 study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP
 (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or
 reagent); USES (Uses); NORL (No role in record)
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical
 study); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation);
 PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES
 (Uses)

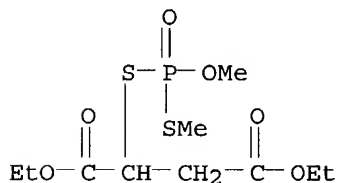


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1310 REFERENCES IN FILE CA (1907 TO DATE)
 999 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 1311 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 3 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 140:429021
 REFERENCE 2: 140:428681
 REFERENCE 3: 140:428670
 REFERENCE 4: 140:362998
 REFERENCE 5: 140:341003
 REFERENCE 6: 140:324936
 REFERENCE 7: 140:323066
 REFERENCE 8: 140:309488
 REFERENCE 9: 140:305809
 REFERENCE 10: 140:305539

L37 ANSWER 15 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 3344-12-5 REGISTRY
 CN Butanedioic acid, [[methoxy(methylthio)phosphinyl]thio]-, diethyl ester
 (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Succinic acid, mercapto-, diethyl ester, S-ester with O,S-dimethyl
 phosphorodithioate (6CI, 7CI, 8CI)
 OTHER NAMES:
 CN 8063HC
 CN Isomalathion
 CN O,S-Dimethyl-S-(1,2-dicarboethoxy)ethyl phosphorodithioate
 CN Phosphorodithioic acid, O,S-dimethyl ester, S-ester with diethyl
 mercaptosuccinate
 CN S-Methyl malathion
 FS 3D CONCORD
 MF C10 H19 O6 P S2
 LC STN Files: AGRICOLA, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CANCERLIT,
 CAOLD, CAPLUS, CASREACT, CHEMCATS, CIN, CSCHEM, EMBASE, IFICDB, IFIPAT,
 IFIUDB, MEDLINE, NIOSHTIC, RTECS*, TOXCENTER, USPATFULL
 (*File contains numerically searchable property data)
 DT.CA Caplus document type: Conference; Dissertation; Journal; Patent; Report
 RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); NORL
 (No role in record)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological
 study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP
 (Preparation); PRP (Properties); RACT (Reactant or reagent); USES
 (Uses); NORL (No role in record)
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical
 study); BIOL (Biological study); PRP (Properties)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

53 REFERENCES IN FILE CA (1907 TO DATE)
 1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 53 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 7 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 140:72955
 REFERENCE 2: 139:241585
 REFERENCE 3: 136:49719
 REFERENCE 4: 133:27603
 REFERENCE 5: 132:60385
 REFERENCE 6: 130:149714

REFERENCE 7: 129:271616

REFERENCE 8: 126:339856

REFERENCE 9: 124:230448

REFERENCE 10: 122:239825

L37 ANSWER 16 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN

RN 1596-84-5 REGISTRY

CN Butanedioic acid, mono(2,2-dimethylhydrazide) (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Succinic acid, mono(2,2-dimethylhydrazide) (8CI)

OTHER NAMES:

CN Alar

CN Alar 85

CN Aminozyd

CN Aminozyde

CN B 995

CN B-Nine

CN Daminozyde

CN Dazyde

CN Dimas

CN DIMG

CN DMASA

CN DYAK

CN Kylar

CN SADH

CN Succinic acid 2,2-dimethylhydrazide

CN Succinic acid N,N-dimethylhydrazide

CN Succinic N',N'-dimethylhydrazide

FS 3D CONCORD

DR 1861-26-3, 74913-15-8

MF C6 H12 N2 O3

CI COM

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DRUGU, EMBASE, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, TULSA, USPAT2, USPATFULL

(*File contains numerically searchable property data)

Other Sources: EINECS**

(**Enter CHEMLIST File for up-to-date regulatory information)

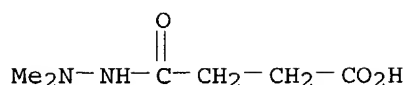
DT.CA Caplus document type: Conference; Dissertation; Journal; Patent; Report

RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: CMBI (Combinatorial study); FORM (Formation, nonpreparative); PREP (Preparation)



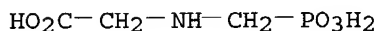
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1952 REFERENCES IN FILE CA (1907 TO DATE)
 8 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 1952 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 55 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 140:370198
 REFERENCE 2: 140:282745
 REFERENCE 3: 140:250192
 REFERENCE 4: 140:248669
 REFERENCE 5: 140:248497
 REFERENCE 6: 140:212462
 REFERENCE 7: 140:194863
 REFERENCE 8: 140:127319
 REFERENCE 9: 140:89211
 REFERENCE 10: 140:72530

L37 ANSWER 17 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 1071-83-6 REGISTRY
 CN Glycine, N-(phosphonomethyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)
 OTHER NAMES:
 CN (Carboxymethylamino)methylphosphonic acid
 CN Accord
 CN Carboxymethylaminomethanephosphinic acid
 CN Folusen
 CN Forsat
 CN Glialka
 CN Glialka 36
 CN Gliz
 CN Gliz 480CS
 CN Glyfos
 CN Glyphodin A
 CN Glyphomax
 CN Glyphosate
 CN Glyphosate CT
 CN Herbatop
 CN Hockey
 CN Kickdown
 CN Lancer
 CN MON 2139
 CN MON 6000
 CN N-Phosphomethylglycine
 CN N-Phosphonomethylglycine
 CN NSC 151063
 CN Phorsat

CN Phosphonomethylglycine
 CN Phosphonomethyliminoacetic acid
 CN Rebel Garden
 FS 3D CONCORD
 DR 37337-60-3, 75241-08-6, 42618-09-7
 MF C3 H8 N O5 P
 CI COM
 LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DRUGU, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, ULIDAT, USPAT2, USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 DT.CA CAplus document type: Book; Conference; Dissertation; Journal; Patent; Report
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)



****PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT****

4753 REFERENCES IN FILE CA (1907 TO DATE)
 287 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 4760 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:28023
 REFERENCE 2: 141:20525
 REFERENCE 3: 141:20522
 REFERENCE 4: 141:19529
 REFERENCE 5: 141:4249
 REFERENCE 6: 141:4193
 REFERENCE 7: 141:2855
 REFERENCE 8: 141:2806

REFERENCE 9: 141:2801

REFERENCE 10: 141:2660

L37 ANSWER 18 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN

RN 604-98-8 REGISTRY

CN Coenzyme A, S-(hydrogen butanedioate) (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Coenzyme A, S-(hydrogen succinate) (8CI)

CN Coenzyme A, S-succinate (6CI, 7CI)

OTHER NAMES:

CN S-Succinoylcoenzyme A

CN Succinyl CoA

CN Succinyl coenzyme A

FS STEREOSEARCH

MF C25 H40 N7 O19 P3 S

CI COM

LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CEN, CHEMLIST, CSCHEM, EMBASE, MEDLINE, PROMT, TOXCENTER, USPATFULL

(*File contains numerically searchable property data)

Other Sources: EINECS**

(**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA Caplus document type: Conference; Dissertation; Journal; Patent; Report

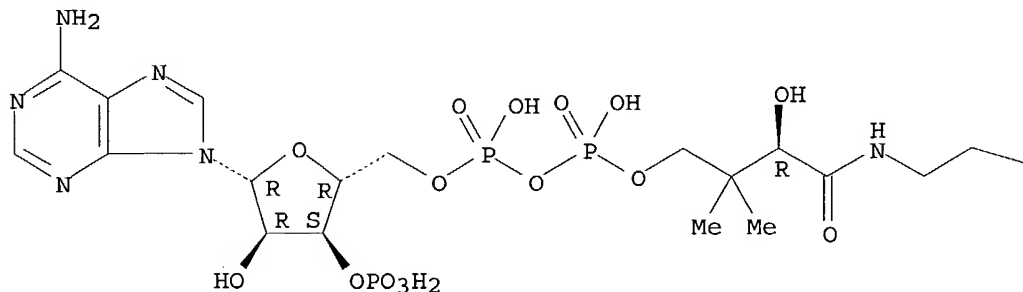
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); PROC (Process); PRP (Properties); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); NORL (No role in record)

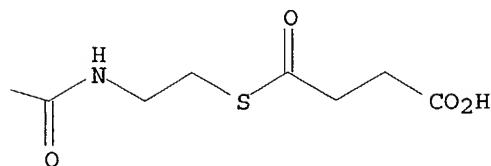
RLD.NP Roles for non-specific derivatives from non-patents: PRP (Properties)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

304 REFERENCES IN FILE CA (1907 TO DATE)
 2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 304 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 34 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 140:141490

REFERENCE 2: 140:124477

REFERENCE 3: 140:75998

REFERENCE 4: 140:58485

REFERENCE 5: 140:14498

REFERENCE 6: 139:243445

REFERENCE 7: 139:65186

REFERENCE 8: 138:367665

REFERENCE 9: 138:357693

REFERENCE 10: 138:149512

L37 ANSWER 19 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN

RN 304-55-2 REGISTRY

CN Butanedioic acid, 2,3-dimercapto-, (2R,3S)-rel- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Butanedioic acid, 2,3-dimercapto-, (R*,S*)-

CN Succinic acid, 2,3-dimercapto-, meso- (8CI)

OTHER NAMES:

CN Chemet

CN DIM-SA

CN DMS

CN DMSA

CN meso-2,3-Dimercaptosuccinic acid

CN meso-Dimercaptosuccinic acid

CN Ro 1-7977

CN Succimer

FS STEREOSEARCH

MF C4 H6 O4 S2

CI COM

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DIOGENES, DRUGU, EMBASE, HSDB*, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PROMT, RTECS*, TOXCENTER, USAN, USPAT2, USPATFULL, VETU

(*File contains numerically searchable property data)

Other Sources: EINECS**, NDSL**, TSCA**, WHO

(**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA CAplus document type: Conference; Dissertation; Journal; Patent; Report

RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)

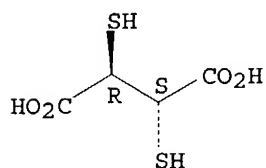
RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological

study); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

Relative stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

376 REFERENCES IN FILE CA (1907 TO DATE)
46 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
378 REFERENCES IN FILE CAPLUS (1907 TO DATE)
2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:27368
REFERENCE 2: 141:18955
REFERENCE 3: 140:350287
REFERENCE 4: 140:316383
REFERENCE 5: 140:248419
REFERENCE 6: 140:217738
REFERENCE 7: 140:189298
REFERENCE 8: 140:158505
REFERENCE 9: 140:140885
REFERENCE 10: 140:72256

L37 ANSWER 20 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN

RN 121-75-5 REGISTRY

CN Butanedioic acid, [(dimethoxyphosphinothioyl)thio]-, diethyl ester (9CI)
(CA INDEX NAME)

OTHER NAMES:

CN 8059HC
CN American Cyanamid 4,049
CN Carbetovur
CN Carbetox
CN Carbofos
CN Carbophos
CN Cimexan
CN Compound 4049
CN Cythion
CN Derbac M
CN Diethyl mercaptosuccinate S-ester with O,O-dimethyl phosphorodithioate

CN ENT 17,034
 CN ENT 17034
 CN Ethiolacar
 CN Etiol
 CN Extermathion
 CN Forthion
 CN Fosfothion
 CN Fosfotion
 CN Fyfanon
 CN Hilthion
 CN IFO 13140
 CN Insecticide 4049
 CN Insecticide no. 4049
 CN Karbofos
 CN Malafor
 CN Malamar
 CN Malamar 50
 CN Malasol
 CN Malaspray
 CN Malataf
 CN Malathine
 CN Malathion
 CN Malathion E 50
 CN Malathion LV Concentrate
 CN Malathion ULV
 CN Malathyl
 CN Malathyne
 CN Malatol
 CN Malatol 500CE
 CN Maldison
 CN Mavidan
 CN Mercaptothion
 CN Moscarda
 CN NSC 6524
 CN O,O-Dimethyl S-(1,2-dicarbethoxyethyl) dithiophosphate
 CN Oleophosphothion
 CN Organoderm
 CN Ortho Malathion
 CN Ovide

ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for
 DISPLAY

FS 3D CONCORD
 DR 12737-19-8, 12767-62-3, 11096-67-6, 11130-60-2, 141263-96-9, 75513-83-6
 MF C10 H19 O6 P S2
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS,
 BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB,
 CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHM, CSNB,
 DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, HODOC*, HSDB*, IFICDB,
 IFIPAT, IFIUDB, IMSCOSEARCH, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC,
 PDLCOM*, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, ULIDAT, USAN, USPAT2,
 USPATFULL, VETU, VTB

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**

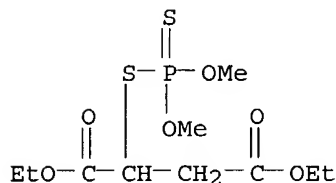
(**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA Caplus document type: Book; Conference; Dissertation; Journal; Patent;
 Report

RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study);
 MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC
 (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses);
 NORL (No role in record)

RLD.P Roles for non-specific derivatives from patents: BIOL (Biological

study); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

10323 REFERENCES IN FILE CA (1907 TO DATE)
 58 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 10331 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 106 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:33101
 REFERENCE 2: 141:28055
 REFERENCE 3: 141:27338
 REFERENCE 4: 141:19178
 REFERENCE 5: 141:19143
 REFERENCE 6: 141:18991
 REFERENCE 7: 141:18810
 REFERENCE 8: 141:11670
 REFERENCE 9: 141:11558
 REFERENCE 10: 141:11263

L37 ANSWER 21 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 110-15-6 REGISTRY
 CN Butanedioic acid (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Succinic acid (8CI)
 OTHER NAMES:
 CN 1,2-Ethanedicarboxylic acid
 CN 1,4-Butanedioic acid
 CN A 12084
 CN Amber acid
 CN Asuccin
 CN Dihydrofumaric acid

CN Katasuccin
 CN NSC 106449
 CN NSC 25949
 CN Wormwood acid
 FS 3D CONCORD
 DR 623158-99-6
 MF C4 H6 O4
 CI COM
 LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VETU, VTB
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 DT.CA Caplus document type: Book; Conference; Dissertation; Journal; Patent; Preprint; Report
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

HO₂C-CH₂-CH₂-CO₂H

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

23884 REFERENCES IN FILE CA (1907 TO DATE)
 2241 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 23910 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 9 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:33090
 REFERENCE 2: 141:33084
 REFERENCE 3: 141:30163
 REFERENCE 4: 141:28647
 REFERENCE 5: 141:28646
 REFERENCE 6: 141:28610

REFERENCE 7: 141:27375

REFERENCE 8: 141:26965

REFERENCE 9: 141:26683

REFERENCE 10: 141:25221

L37 ANSWER 22 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN

RN 108-30-5 REGISTRY

CN 2,5-Furandione, dihydro- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Succinic anhydride (8CI)

OTHER NAMES:

CN 2,5-Diketotetrahydrofuran

CN Butanedioic anhydride

CN Dihydro-2,5-furandione

CN NSC 8518

CN Rikacid SA

CN Succinic acid anhydride

CN Succinyl anhydride

CN Succinyl oxide

CN Tetrahydro-2,5-dioxofuran

CN Tetrahydro-2,5-furandione

FS 3D CONCORD

MF C4 H4 O3

CI COM

LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHM, CSNB, DDFU, DETHERM*, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPAT, ENCOMPAT2, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, PS, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, USPAT2, USPATFULL, VTB

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

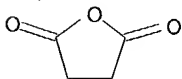
DT.CA Caplus document type: Conference; Dissertation; Journal; Patent; Report

RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)



****PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT****

8858 REFERENCES IN FILE CA (1907 TO DATE)
 2471 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 8882 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 59 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:31112

REFERENCE 2: 141:27260

REFERENCE 3: 141:25127

REFERENCE 4: 141:24724

REFERENCE 5: 141:24111

REFERENCE 6: 141:24073

REFERENCE 7: 141:23960

REFERENCE 8: 141:23911

REFERENCE 9: 141:23519

REFERENCE 10: 141:23390

L37 ANSWER 23 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN

RN 97-67-6 REGISTRY

CN Butanedioic acid, hydroxy-, (2S)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Butanedioic acid, hydroxy-, (S)-

CN Malic acid, L- (3CI)

CN Malic acid, L- (8CI)

OTHER NAMES:

CN (-)-(S)-Malic acid

CN (-)-Hydroxysuccinic acid

CN (-)-L-Malic acid

CN (-)-Malic acid

CN (2S)-2-Hydroxybutanedioic acid

CN (S)-Malic acid

CN Apple acid

CN L-(-)-Malic acid

CN L-Malic acid

CN NSC 9232

CN S-(-)-Malic acid

CN S-2-Hydroxybutanedioic acid

FS STEREOSEARCH

DR 498-37-3, 124501-05-9, 84781-39-5, 6294-10-6

MF C4 H6 O5

CI COM

LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, DETHERM*, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MRCK*, NAPRALERT, PIRA, PROMT, PS, SPECINFO, SYNTHLINE, TOXCENTER, USPAT2, USPATFULL

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

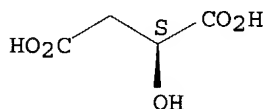
(**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA Caplus document type: Conference; Dissertation; Journal; Patent; Report

RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study);

FORM (Formation, nonpreparative); PREP (Preparation); PROC (Process);
 PRP (Properties); RACT (Reactant or reagent); USES (Uses)
 RLD.P Roles for non-specific derivatives from patents: ANST (Analytical
 study); BIOL (Biological study); PREP (Preparation); PROC (Process);
 USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological
 study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU
 (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT
 (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical
 study); BIOL (Biological study); FORM (Formation, nonpreparative); PREP
 (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or
 reagent); USES (Uses)

Absolute stereochemistry. Rotation (-).



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2246 REFERENCES IN FILE CA (1907 TO DATE)
 38 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 2248 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:24017
 REFERENCE 2: 141:23414
 REFERENCE 3: 141:22259
 REFERENCE 4: 141:19467
 REFERENCE 5: 140:422734
 REFERENCE 6: 140:406978
 REFERENCE 7: 140:406411
 REFERENCE 8: 140:402582
 REFERENCE 9: 140:391579
 REFERENCE 10: 140:390475

L37. ANSWER 24 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN

RN 97-65-4 REGISTRY

CN Butanedioic acid, methylene- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Succinic acid, methylene- (8CI)

OTHER NAMES:

CN 2-Methylenebutanedioic acid

CN 2-Methylenesuccinic acid

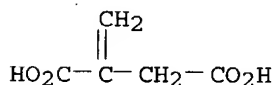
CN 2-Propene-1,2-dicarboxylic acid

CN Itaconic acid

CN Methylenebutanedioic acid

CN Methylene-succinic acid

CN NSC 3357
 CN Propylenedicarboxylic acid
 FS 3D CONCORD
 MF C5 H6 O4
 CI COM
 LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHM, DDFU, DETHERM*, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, PDLCOM*, PIRA, PROMT, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 DT.CA Caplus document type: Conference; Dissertation; Journal; Patent; Report
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2943 REFERENCES IN FILE CA (1907 TO DATE)
 607 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 2948 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 133 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:24561
 REFERENCE 2: 141:23728
 REFERENCE 3: 140:431319
 REFERENCE 4: 140:423437
 REFERENCE 5: 140:406824
 REFERENCE 6: 140:406737
 REFERENCE 7: 140:391549
 REFERENCE 8: 140:391517

REFERENCE 9: 140:375527

REFERENCE 10: 140:359003

L37 ANSWER 25 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN

RN 87-69-4 REGISTRY

CN Butanedioic acid, 2,3-dihydroxy- (2R,3R)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Butanedioic acid, 2,3-dihydroxy- [R-(R*,R*)]-

CN Tartaric acid, L-(+)- (8CI)

OTHER NAMES:

CN (+)-(R,R)-Tartaric acid

CN (+)-L-Tartaric acid

CN (+)-Tartaric acid

CN (2R,3R)-(+)-Tartaric acid

CN (2R,3R)-Tartaric acid

CN (R,R)-(+)-Tartaric acid

CN (R,R)-Tartaric acid

CN 1,2-Dihydroxyethane-1,2-dicarboxylic acid

CN 2,3-Dihydroxybutanedioic acid

CN 2R,3R-Tartaric acid

CN d- α , β -Dihydroxysuccinic acid

CN d-Tartaric acid

CN Dextrotartaric acid

CN Dihydroxysuccinic acid

CN E 334

CN L-(+)-Tartaric acid

CN L-Tartaric acid

CN Natural tartaric acid

CN NSC 62778

CN Tartaric acid

CN Threarcic acid

FS STEREOSEARCH

DR 8014-54-8, 8059-77-6, 1336-18-1

MF C4 H6 O6

CI COM

LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DIOGENES, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, PS, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, USAN, USPAT2, USPATFULL

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA CAplus document type: Book; Conference; Dissertation; Journal; Patent; Report

RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

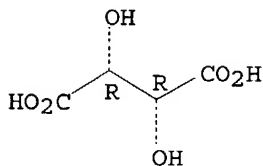
RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical

study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

17284 REFERENCES IN FILE CA (1907 TO DATE)
1359 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
17316 REFERENCES IN FILE CAPLUS (1907 TO DATE)
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:30163
REFERENCE 2: 141:28703
REFERENCE 3: 141:28665
REFERENCE 4: 141:28647
REFERENCE 5: 141:28646
REFERENCE 6: 141:28267
REFERENCE 7: 141:27375
REFERENCE 8: 141:27286
REFERENCE 9: 141:26982
REFERENCE 10: 141:26965

L37 ANSWER 26 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN

RN 56-84-8 REGISTRY

CN L-Aspartic acid (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Aspartic acid, L- (8CI)

OTHER NAMES:

CN (+)-Aspartic acid

CN (S)-Aminobutanedioic acid

CN (S)-Aspartic acid

CN Asparagic acid

CN Asparaginic acid

CN Aspartic acid

CN Butanedioic acid, amino-, (S)-

CN H-Asp-OH

CN L-(+)-Aspartic acid

CN L-Aminosuccinic acid

CN L-Asparagic acid

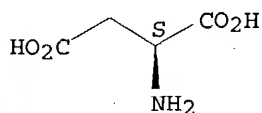
CN L-Asparaginic acid

CN NSC 3973

CN NSC 79553

FS STEREOSEARCH
 DR 6899-03-2, 181119-33-5
 MF C4 H7 N O4
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHM, CSNB, DDFU, DETHERM*, DIOGENES, DRUGU, EMBASE, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, PS, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VTB
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**, WHO
 (**Enter CHEMLIST File for up-to-date regulatory information)
 DT.CA CAplus document type: Book; Conference; Dissertation; Journal; Patent; Report
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

Absolute stereochemistry. Rotation (+).



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

36666 REFERENCES IN FILE CA (1907 TO DATE)
 1100 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 36733 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 3 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 141:33065
 REFERENCE 2: 141:33053
 REFERENCE 3: 141:33052
 REFERENCE 4: 141:28665
 REFERENCE 5: 141:28342
 REFERENCE 6: 141:23872

REFERENCE 7: 141:22949

REFERENCE 8: 141:22847

REFERENCE 9: 141:22820

REFERENCE 10: 141:22783

=>

? SHOW FILES

File 50:CAB Abstracts 1972-2004/Jun
(c) 2004 CAB International

File 342:Derwent Patents Citation Indx 1978-04/200439
(c) 2004 Thomson Derwent

File 351:Derwent WPI 1963-2004/UD,UM &UP=200442
(c) 2004 Thomson Derwent

?

?

? DS

Set	Items	Description
S1	7	(SUCCINIC(W)ACID OR (CALCIUM OR MAGNESIUM OR DIAMMONIUM OR AMMONIUM) (W)SUCCINATE) (S) (GLYPHOSATE OR GLUFOSINATE(2W)AMMONIUM) (S)HERB?
S2	7	RD (unique items)

?

?

? T S2/3 AB KWIC/1-7

>>>No matching display code(s) found in file(s): 342

2/ABKWIC/1 (Item 1 from file: 50)

DIALOG(R)File 50:CAB Abstracts

(c) 2004 CAB International. All rts. reserv.

00884584 CAB Accession Number: 800706610

Phytotoxicity from the decomposition of couch grass rhizomes.

Lynch, J. M.; Penn, D. J.; Hall, K. C.; Anderson, H. A.

ARC Letcombe Lab., Wantage, Oxon OX12 9JT, UK.

Annual report 1978.

p.33-34

Publication Year: 1979

Publisher: Agricultural Research Council Letcombe Laboratory. --

Wantage, UK

Language: English

Document Type: Miscellaneous

In a greenhouse experiment, barley was grown in silt loam at 2 m.c., with or without ammonium sulphate. When rhizomes of *Agropyron repens* killed by **glyphosate** were buried in the soil, most barley seedlings died before the 3rd leaf had emerged and in the remainder leaf growth was retarded. In the presence of live rhizomes no seedlings were killed and retardation of leaf growth was less. Injury was greater at 20 than at 30% soil m.c. and where N was added, indicating that microbial immobilization of N was not responsible for the effects. Rhizomes killed by freezing in liquid N were not toxic. When rhizomes killed by **herbicide** or freezing were incubated for 6 days in anaerobic slurries of soil, only sol. from the former treatment were toxic, but toxic effects were also observed from fresh rhizomes killed by the anaerobic conditions in the slurries. The active sol. contained toxic conc. of acetic, propionic and butyric acids. The phytotoxicity was considered to be due to decay products, rather than **herbicide** released from the rhizomes, since plants in sol. culture exposed to comparable **herbicide** conc. showed no toxic effects. The phytotoxic sol. contained 4 phenolic acids and **succinic acid**. 1 ref.

--

...2 m.c., with or without ammonium sulphate. When rhizomes of *Agropyron repens* killed by **glyphosate** were buried in the soil, most barley seedlings died before the 3rd leaf had emerged...

... effects. Rhizomes killed by freezing in liquid N were not toxic. When rhizomes killed by **herbicide** or freezing were incubated for 6 days in anaerobic slurries of soil, only sol. from...

... and butyric acids. The phytotoxicity was considered to be due to decay products, rather than **herbicide** released from the rhizomes, since plants in sol. culture exposed to comparable **herbicide** conc. showed no toxic effects. The phytotoxic sol. contained 4 phenolic acids and **succinic acid**.

2/ABKWIC/2 (Item 1 from file: 342)
DIALOG(R)File 342:Derwent Patents Citation Indx
(c) 2004 Thomson Derwent. All rts. reserv.

03008550 WPI Acc No: 98-051939/05
Killing weeds which are difficult to kill - using succinic acid derivatives as adjuvants in glyphosate type herbicide compositions
Patent Assignee: (ICIL) IMPERIAL CHEM IND PLC
Author (Inventor): AUDA M; REEKMANS S I J
Patent (basic)
Patent No Kind Date Examiner Field of Search
WO 9747199 A1 971218 (BASIC)
Derwent Week (Basic): 9805
Priority Data: GB 9612197 (960611); WO 97GB1484 (970602)
Applications: AU 9729717 (970602); BR 979777 (970602); EP 97924150 (970602); NZ 332929 (970602); WO 97GB1484 (970602); JP 98501335 (970602); ZA 975041 (970606); MX 10261 (981204); KR 98710065 (981209)
Designated States
(National): AU; BR; CA; JP; KR; MX; NZ; US
(Regional): AT; BE; CH; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE
Derwent Class: C03
Int Pat Class: A01N-037/30; A01N-057/20
Number of Patents: 009
Number of Countries: 027
Number of Cited Patents: 001
Number of Cited Literature References: 001
Number of Citing Patents: 004

2/ABKWIC/3 (Item 1 from file: 351)
DIALOG(R)File 351:Derwent WPI
(c) 2004 Thomson Derwent. All rts. reserv.

015562662
WPI Acc No: 2003-624818/200359
Related WPI Acc No: 2001-366134; 2004-042164
XRAM Acc No: C03-170616
Herbicidal composition useful for controlling plant growth comprises glyphosate, sodium salicylate and at least one aliphatic monocarboxylic acid and optionally additive
Patent Assignee: APPLIED CARBOCHEMICALS (CARB-N); SUMMERDALE INC (SUMM-N)
Inventor: COLEMAN R
Number of Countries: 001 Number of Patents: 001
Patent Family:
Patent No Kind Date Applicat No Kind Date Week
US 6509297 B1 20030121 US 99427476 A 19991026 200359 B
US 2000692763 A 20001019

Priority Applications (No Type Date): US 99427476 A 19991026; US 2000692763 A 20001019

Patent Details:
Patent No Kind Lan Pg Main IPC Filing Notes
US 6509297 B1 20 A01N-057/00 Div ex application US 99427476
Div ex patent US 6218336

Abstract (Basic): US 6509297 B1

Abstract (Basic):

NOVELTY - A **herbicidal** composition comprises glyphosate, sodium salicylate and at least one aliphatic monocarboxylic acid and optionally additive selected from **succinic acid**, succinate, tartaric acid, citric acid, malic acid, lactic acid, adipic acid, pine oil, limonene, ammonium tartrate and optionally ammonium sulfate.

ACTIVITY - Herbicide.

A test composition (a) contained (wt.%) succinic acid (1) and sodium salicylate (1) was prepared. Comparative compositions contained (b) succinic acid (1) only and (c) sodium salicylate (1) only were prepared. The test/comparative compositions were tested on cotton to find % of foliage affected. After 2 days of treatment, it was observed that for (a)/(b)/(c), the % of foliage affected was greater than 70/no effect/less than 70.

MECHANISM OF ACTION - None given.

USE - As herbicidal composition for controlling plant growth.

ADVANTAGE - The additives enhance the herbicidal activity of herbicidal fatty acids and other herbicides and provide herbicides with either enhanced activity or reduced fatty acid concentrations, thus reducing costs, and environmentally undesirable effects.

pp; 20 DwgNo 0/0

Abstract (Basic):

... A **herbicidal** composition comprises glyphosate, sodium salicylate and at least one aliphatic monocarboxylic acid and optionally additive selected from **succinic acid**, succinate, tartaric acid, citric acid, malic acid, lactic acid, adipic acid, pine oil, limonene, ammonium...

2/ABKWIC/4 (Item 2 from file: 351)

DIALOG(R)File 351:Derwent WPI

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014687085

WPI Acc No: 2002-507789/200254

XRAM Acc No: C02-144302

Aqueous herbicidal composition useful for killing or controlling the growth of plants comprises glyphosate and/or bipyridilium or their derivatives e.g. diquat or paraquat, and at least one surfactant e.g. polyethylene glycol derivatives

Patent Assignee: MONSANTO TECHNOLOGY LLC (MONS)

Inventor: CROCKETT R P; DYSLEWSKI A; KRAMER R M; RIEGO D C; SANDBRINK J J;

SUTTNER D L; WILLIAMSON D H; WRIGHT D L

Number of Countries: 094 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200221924	A2	20020321	WO 2001US28617	A	20010913	200254 B
AU 200190856	A	20020326	AU 200190856	A	20010913	200254

Priority Applications (No Type Date): US 2000232508 P 20000913

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200221924 A2 E 244 A01N-057/20

Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CO CR CU CZ DE DK DM EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

AU 200190856 A A01N-057/20 Based on patent WO 200221924

Abstract (Basic): WO 200221924 A2

Abstract (Basic):

NOVELTY - An aqueous herbicidal composition comprises glyphosate (a), bipyridilium (b) or their derivatives and at least one surfactant (c).

DETAILED DESCRIPTION - An aqueous herbicidal composition comprises glyphosate (a), bipyridilium (b) or their derivatives and at least one surfactant (c). (a) (acid equivalent basis) and b (cation equivalent basis) are present in a weight ratio of 11:1-100:1 (preferably 26:1 - 100:1). (a) (acid equivalent basis) and (c) are present in a weight ratio of 0.5:1 - 48:1. (c) enhances absorption and translocation of (a) within a plant before leaf damage induced by (b) would interfere with further adsorption and translocation of (a).

INDEPENDENT CLAIMS are also included for the following:

(1) an aqueous herbicide liquid concentrate (A), which is optionally diluted with water to provide an aqueous herbicidal application mixture comprising (a) (120 g acid equivalent per liter), (b) and (c). (a) and (b) are in the ratio of 1:1-100:1;

(2) an aqueous herbicide particulate concentrate (B), which is optionally diluted with water to provide an aqueous herbicidal application mixture comprising (a) (50 wt.%), (b) and (c). (a) and (b) is in the ratio of 1:1 - 100:1. (a) and (b) is present in a weight ratio of 1:1 - 40:1;

(3) killing or controlling growth of plants such as weed or vegetation involving either i) contacting the composition, or ii) diluting (A) or (B) in a water to form application mixture, and applying the mixture to the foliage of the weed or vegetation; and

(4) preparation of (B) involving mixing (a), a superspreading surfactant and (b).

ACTIVITY - Herbicide.

MECHANISM OF ACTION - None given.

USE - For killing or controlling the growth of unwanted plants e.g. weeds or vegetation (claimed).

ADVANTAGE - The composition or concentrate controls plant growth to a greater extent than a similar loaded composition comprising trimesium glyphosate, a diquat or paraquat and an alkylpolyglycoside surfactant. (a) provides at least 70% control of plant regrowth within 50 days after application of the composition. (b) provides visual symptoms of the treatment within 3 days after application of the composition. The herbicidal composition causes early visual symptoms of treatment and/or enhanced effectiveness when applied to the foliage of plants. (B) are storage stable.

pp; 244 DwgNo 0/0

Abstract (Basic):

Technology Focus:

... Preferred Components: (b) and (c) are not substantially antagonistic to the **herbicidal** activity of (a). The dicarboxylic acid is oxalic acid, malonic acid, **succinic acid**, glutaric acid, maleic acid, adipic acid and/or fumaric acid. (a) comprises a salt of **glyphosate** having alkali metal, ammonium, 1-16C alkylammonium, 1-16C alkanolammonium or 1-16C alkylsulfonium salt of **glyphosate**. The salt of **glyphosate** is potassium **glyphosate**, monoammonium **glyphosate**, diammonium **glyphosate**, sodium **glyphosate**, monoethanolamine **glyphosate**, n-propylamine **glyphosate**, ethylamine **glyphosate**, ethylenediamine **glyphosate**, hexamethylenediamine **glyphosate** and/or trimethylsulfonium **glyphosate** (preferably potassium **glyphosate** or ammonium **glyphosate**). (c) optionally contains an alkylpolyglycoside in combination with at least one additional surfactant and further...

2/ABKWIC/5 (Item 3 from file: 351)
 DIALOG(R)File 351:Derwent WPI
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014333761

WPI Acc No: 2002-154464/200220

Related WPI Acc No: 2002-759805; 2003-183954; 2003-239087

XRAM Acc No: C02-048163

New surfactants and herbicide and pesticide compositions, comprising
 surfactant and glyphosic acid salt, for application to plant foliage
 Patent Assignee: MONSANTO TECHNOLOGY LLC (MONS); ABRAHAM W (ABRA-I);
 AGBAJE H E (AGBA-I); ARHANCET G B (ARHA-I); BECHER D Z (BECH-I); BRINKER
 R J (BRIN-I); CHEN X (CHEN-I); GILLESPIE J L (GILL-I); GLAENZER J A
 (GLAE-I); GRAHAM J A (GRAH-I); HENKE S L (HENK-I); LENNON P J (LENN-I);
 MAHONEY M D (MAHO-I); PALLAS N R (PALL-I); WIDEMAN A S (WIDE-I); WRIGHT D
 R (WRIG-I); XU X C (XUXC-I)

Inventor: ABRAHAM W; AGBAJE H E; ARHANCET G B; BECHER D Z; BRINKER R J;
 CHEN X; GILLESPIE J L; GLAENZER J L; GRAHAM J A; HENKE S L; LENNON P J;
 MAHONEY M D; PALLAS N R; WIDEMAN A S; WRIGHT D L; XU X C; REYNOLDS T L;
 GLAENZER J A; WRIGHT D R

Number of Countries: 094 Number of Patents: 009

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200189302	A2	20011129	WO 2001US16550	A	20010521	200220 B
AU 200163361	A	20011203	AU 200163361	A	20010521	200221
US 20020123430	A1	20020905	US 2000205524	P	20000519	200260
			US 2000206628	P	20000524	
			US 2001273234	P	20010302	
			US 2001274368	P	20010308	
			WO 2001US16550	A	20010521	
			US 2001926521	A	20011114	
			US 2001988353	A	20011119	
US 20030104943	A1	20030605	WO 2001US16550	A	20010521	200339
			US 2002926521	A	20020426	
EP 1343375	A2	20030917	EP 2001937648	A	20010521	200362
			WO 2001US16550	A	20010521	
JP 2003535056	W	20031125	JP 2001585556	A	20010521	200380
			WO 2001US16550	A	20010521	
CN 1444451	A	20030924	CN 2001812059	A	20010521	200382
HU 200302482	A2	20031128	WO 2001US16550	A	20010521	200405
			HU 20032482	A	20010521	
BR 200110978	A	20040113	BR 200110978	A	20010521	200409
			WO 2001US16550	A	20010521	

Priority Applications (No Type Date): US 2001274368 P 20010308; US
 2000205524 P 20000519; US 2000206628 P 20000524; US 2001273234 P 20010302
 ; US 2001926521 A 20011114; US 2001988353 A 20011119; US 2002926521 A
 20020426

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200189302 A2 E 363 A01N-057/20

Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN
 CO CR CU CZ DE DK DM EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE
 KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU
 SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR
 IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

AU 200163361 A A01N-057/20 Based on patent WO 200189302

US 20020123430 A1 A01N-057/18 Provisional application US 2000205524

Provisional application US 2000206628

Provisional application US 2001273234

Provisional application US 2001274368
CIP of application WO 2001US16550
CIP of application US 2001926521

US 20030104943 A1 A01N-057/18
EP 1343375 A2 E A01N-057/20 Based on patent WO 200189302
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT
LI LT LU LV MC MK NL PT RO SE SI TR
JP 2003535056 W 415 A01N-025/30 Based on patent WO 200189302
CN 1444451 A A01N-057/20
HU 200302482 A2 A01N-057/20 Based on patent WO 200189302
BR 200110978 A A01N-057/20 Based on patent WO 200189302

Abstract (Basic): WO 200189302 A2

Abstract (Basic):

NOVELTY - Formulation for retarding growth of vegetation comprises an aqueous mixture containing surfactant and glyphosate or its salt or ester. On application of the formulation to a plant, liquid crystals comprising the surfactant form in or on the foliage of the plant.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) storage stable herbicidal concentrates that can be diluted with water to form an aqueous herbicidal mixture for application to plant foliage, comprising glyphosate and a surfactant, such that when applied, anisotropic aggregates comprising the surfactant form on foliage or in cuticles;

(2) formulations for retarding growth of vegetation comprising an aqueous mixture containing glyphosate and surfactant that forms anisotropic aggregates within the cuticles of plant foliage;

(3) a surfactant of formula (I)-(XVIII);

(4) a pesticidal composition comprising at least 1 pesticide and at least 1 surfactant (I)-(XVIII);

R1=H or hydrocarbyl of at least 7C;

R2=2-4C alkylene;

R3=2-6C optionally substituted hydrocarbylene;

R4, R5=H, -(R6)n-(R20)7-R7 or optionally substituted 1-30C

hydrocarbyl; or

NR4R5=heterocyclic ring;

R6=1-6C optionally substituted hydrocarbylene;

R7=H or 1-4C alkyl;

n=0-1;

x, y=1-60;

provided that when R2 and R3=ethylene, R1 is not unsubstituted alkyl or R4 is not H or unsubstituted alkyl when R5=H or unsubstituted alkyl; and when R2 and R3=i-Pr and x=1, R1 is not unsubstituted alkyl or R4 is not -(R20)yR7;

R11, R13=H or optionally substituted 1-30C hydrocarbyl;

R12=2-4C alkylene;

R14=1-30C optionally substituted hydrocarbylene;

R15=hydroxyalkyl, polyhydroxyalkyl or poly(hydroxyalkyl)alkyl;

xa=0-30;

ya=0-1;

R21, R23=H or 1-22C optionally substituted hydrocarbyl;

R22=2-18C optionally substituted hydrocarbylene;

R24, R25=hydroxyalkyl, polyhydroxyalkyl or poly(hydroxyalkyl)alkyl;

provided that when R21 and R23=Me, R22 is not octylene;

R31=optionally substituted 1-30C hydrocarbyl;

R32-R35=H, -(R38)s-(R370)naR36 or optionally substituted 1-30C

hydrocarbyl;

R36=H or 1-4C alkyl;

R37=2-4C alkylene;

R38=1-6C optionally substituted hydrocarbylene;

na=1-10;

xb, yb=1-4;

s=0-1;

provided that when R31=alkyl, R32 is not H, xb=3-4, or R34 is not
 -(R37O)naR36;
 R41=optionally substituted 1-30C hydrocarbyl;
 R42=2-4C alkylene;
 R43=H or 1-4C alkyl;
 R44=1-30C alkynyl, aryl, or aralkyl;
 xc=1-60;
 R51=optionally substituted 8-30C hydrocarbyl;
 R52, R53=-(R54O)xdR55;
 R54=2-4C alkylene;
 R55=H or optionally substituted 1-30C hydrocarbyl;
 xd=1-50;
 R61=H or optionally substituted 1-30C hydrocarbyl;
 R62=2-4C alkylene;
 R63=2-6C optionally substituted hydrocarbylene;
 R64, R65=H, -(R66)nb-(R62O)yeR67 or optionally substituted 1-30C
 hydrocarbyl;
 R66=optionally substituted 1-6C hydrocarbylene;
 R67=H or 1-4C alkyl;
 ny=0-1;
 xe, ye=1-60;
 R71=optionally substituted 8-30C hydrocarbyl;
 R72=2-4C alkylene;
 R73, R75, R76=H, -(R72O)yfR77 or optionally substituted 1-30C
 hydrocarbyl;
 R74=optionally substituted 2-6C hydrocarbylene, -C(=NR1a)NR1bR1c-,
 C(O)NR1bR1c-, C(S)NR1bR1c-, -C(=NR1b-, -C(S)- or -C(O)-;
 R77=H or 1-4C alkyl;
 R1a, R1b, R1c=H or optionally substituted 1-30C hydrocarbyl;
 xf=1-30;
 Yf=1-50;
 provided that at least 1 R73, R75 or R76=-(R72O)yfR77, at least 1
 R72 is not ethylene, R74 is not unsubstituted propylene, R71 is not
 unsubstituted alkyl, or xf is 2-30;
 R81=optionally substituted 6-30C hydrocarbyl or R4SR5;
 R82, R84=2-4C alkylene;
 R83=H or 1-4C alkyl;
 R85=4-15C alkyl;
 xg, yg=1-40;
 R91=H or 1-4C alkyl;
 R92=2-4C alkylene;
 R93=optionally substituted 2-30C hydrocarbyl;
 xh, yh=1-60;
 R101, R109, R112=optionally substituted 1-30C hydrocarbyl or
 -(R102O)p'R113;
 R102=2-4C alkylene;
 R103, R108, R111, R113, R115=H or optionally substituted 1-30C
 hydrocarbyl;
 R104=-(CH2)yiOR113 or -(CH2)yiO(R102)q'R103;
 R105-R107=H, R104 or optionally substituted 1-30C hydrocarbyl;
 R100=optionally substituted 2-30C hydrocarbyl;
 R114=optionally substituted 1-30C hydrocarbyl or
 -(CH2)zO(R102)p'R103;
 m', n', p', q'=1-50;
 X=O, NR114, C(O), C(O)O, OC(O), N(R115)C(O), C(O)N(R115), S, SO or
 SO2;
 t'=0-1;
 A=anion; and
 yi, z=0-30.
 ACTIVITY - Herbicide; Pesticide; Plant Growth Regulant.
 MECHANISM OF ACTION - None given.
 USE - As herbicides (preferably as a growth regulant of e.g.
 Velvetleaf) and pesticides.

pp; 363 DwgNo 0/4

Abstract (Basic):

Technology Focus:

... Preferred Formulation: Weight ratio of **glyphosate** :surfactant is at most 10:1. Formulation comprises 270, 350 or 400-600 g/l **glyphosate** acid equivalent, preferably potassium **glyphosate**. Formulation has a cloud point of at least 50degreesC, preferably 60degreesC and a crystallization point...

...no more than 14. The formulation is a concentrate, and may further comprise a second **herbicide**, a dicarboxylic acid (e.g. oxalic acid, malonic acid, **succinic acid**, glutaric acid, maleic acid, adipic acid and/or fumaric acid) and a **glyphosate** salt (e.g. potassium, monoammonium, diammonium, sodium, monoethanolamine, n-propylamine, ethylamine, ethylenediamine, hexamethyldiamine and/or trimethylsulfonium **glyphosate**). The surfactant is not antagonistic to the **herbicidal** activity of the **glyphosate**.

2/ABKWIC/6 (Item 4 from file: 351)
DIALOG(R)File 351:Derwent WPI
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013881922

WPI Acc No: 2001-366134/200138

Related WPI Acc No: 2003-624818; 2004-042164

XRAM Acc No: C01-112196

Enhancing the herbicidal activity of aliphatic monocarboxylic acid herbicides, useful as e.g. desiccants and defoliants, comprises adding a succinic acid compound

Patent Assignee: APPLIED CARBOCHEMICALS INC (CARB-N); SUMMERDALE INC (SUMM-N); APPLIED CARBOCHEMICALS (CARB-N)

Inventor: COLEMAN R

Number of Countries: 094 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6218336	B1	20010417	US 99427476	A	19991026	200138 B
WO 200130157	A1	20010503	WO 2000US28405	A	20001013	200138
AU 200112035	A	20010508	AU 200112035	A	20001013	200149
CN 1414832	A	20030430	CN 2000817831	A	20001013	200351

Priority Applications (No Type Date): US 99427476 A 19991026

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6218336	B1	20		A01N-063/00	
WO 200130157	A1	E		A01N-059/00	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW

AU 200112035	A	A01N-059/00	Based on patent WO 200130157
CN 1414832	A	A01N-059/00	

Abstract (Basic): US 6218336 B1

Abstract (Basic):

NOVELTY - A method for enhancing the herbicidal activity of an aliphatic monocarboxylic acid herbicide (I) comprises adding a compound (II) selected from succinic acid, dimethyl succinic acid, calcium succinate, magnesium succinate, diammonium succinate and ammonium succinate.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a herbicidal composition comprising (I) and (II).

ACTIVITY - Herbicidal. In a field trial on Katahdin potatoes, application of a composition comprising 5% pelargonic acid and 1% diammonium succinate gave a dessication rating (scale of 1-5; 5=complete desiccation) of 4.23 on day 1 and 4.57 on day 5, compared with 4.07 and 4.43, respectively, for 5% pelargonic acid alone.

USE - Compositions comprising (I) and (II) are useful as desiccants and defoliants, e.g. for potatoes, beans and cotton, and for weed control.

ADVANTAGE - Combinations of (I) and (II) have synergistically enhanced herbicidal activity.

pp; 20 DwgNo 0/0

Abstract (Basic):

Technology Focus:

... Preferred **Herbicide**: (I) comprises pelargonic acid, caprylic acid, caproic acid, capric acid, oleic acid, acetic acid, butyric...

...and/or heptanoic acid, especially caprylic acid and/or pelargonic acid.

Preferred Additive: (II) is **succinic acid**, optionally in admixture with tartaric acid, citric acid, malic acid, lactic acid, adipic acid, pine...

...is 1:10 to 20:1, especially 1-20:1. The composition can also contain **glufosinate ammonium** or **glyphosate**.

2/ABKWIC/7 (Item 5 from file: 351)

DIALOG(R)File 351:Derwent WPI

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011634811

WPI Acc No: 1998-051939/199805

XRAM Acc No: C98-017762

Killing weeds which are difficult to kill - using **succinic acid** derivatives as adjuvants in **glyphosate** type **herbicide** compositions

Patent Assignee: IMPERIAL CHEM IND PLC (ICIL)

Inventor: AUDA M; REEKMAN S I J

Number of Countries: 027 Number of Patents: 009

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9747199	A1	19971218	WO 97GB1484	A	19970602	199805 B
ZA 9705041	A	19980225	ZA 975041	A	19970606	199813
AU 9729717	A	19980107	AU 9729717	A	19970602	199820
EP 906018	A1	19990407	EP 97924150	A	19970602	199918
			WO 97GB1484	A	19970602	
BR 9709777	A	19990810	BR 979777	A	19970602	199953
			WO 97GB1484	A	19970602	
NZ 332929	A	20000825	NZ 332929	A	19970602	200049
			WO 97GB1484	A	19970602	
JP 2000511924	W	20000912	WO 97GB1484	A	19970602	200050
			JP 98501335	A	19970602	
MX 9810261	A1	19991001	MX 9810261	A	19981204	200103
KR 2000016480	A	20000325	WO 97GB1484	A	19970602	200104
			KR 98710065	A	19981209	

Priority Applications (No Type Date): GB 9612197 A 19960611

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 9747199 A1 E 15 A01N-057/20

Designated States (National): AU BR CA JP KR MX NZ US

Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LU MC
NL PT SE

ZA 9705041 A 13 A01N-000/00

AU 9729717 A A01N-057/20 Based on patent WO 9747199

EP 906018 A1 E A01N-057/20 Based on patent WO 9747199

Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE

BR 9709777 A A01N-057/20 Based on patent WO 9747199

NZ 332929 A A01N-057/20 Based on patent WO 9747199

JP 2000511924 W 16 A01N-057/20 Based on patent WO 9747199

MX 9810261 A1 C07C-233/20

KR 2000016480 A A01N-057/20 Based on patent WO 9747199

Abstract (Basic): WO 9747199 A

Killing weeds which are difficult to kill comprises applying a herbicidal composition comprising: (a) a glyphosate type herbicide compound and (b) a **succinic acid** derivative of formula (I) as adjuvant. 1 of R1, R2 = 6-22C alkyl or 6-22C alkenyl, and the other = H; R3 = polyhydroxy hydrocarbyl; R4 = H or 1-22C hydrocarbyl; R5 = NR3R4 or O-(AO)n-R6; AO = alkylene oxide; n = 1-200; R6 = H or 1-22C hydrocarbyl.

The active herbicide is preferably a glyphosate amine salt, especially glyphosate isopropylamino salt (N-phosphonomethylglycine isopropylamine salt). The formulation also contains at least 1 accessory or co-solvent, preferably a water soluble and/or miscible organic solvent for the adjuvant surfactant which comprises a glycol, a low molecular weight polyglycol ether or its monoalkyl ethers and/or dimethyl sorbide. The weight ratio of herbicide to surfactant is 1:5-10:1.

USE - The process is useful against weeds which require a much larger application of herbicide than most weeds. The composition is particularly used on broad leaved, dicotyledonous weeds and grass perennial weeds, including *Chenopodium album*, *Solanum nigrum*, *Lactuca saligna*, *Amaranthus retroflexus*, *Erigeron canadensis*, *Cirsium arvense*, *Lolium perenne*, *Convolvulus arvensis* and *Agropyron repens*. Application rate of herbicide is 300-4000 g/ha. Application rate of adjuvant is 150-4000 g/ha.

ADVANTAGE - The composition has improved speed of action, is effective at lower concentrations and reduces the effect of seed spread from treated weeds. The composition has improved rain fastness when applied.

Dwg.0/0

... using **succinic acid** derivatives as adjuvants in
glyphosate type herbicide compositions

...Abstract (Basic): comprises applying a herbicidal composition comprising: (a) a glyphosate type herbicide compound and (b) a **succinic acid** derivative of formula (I) as adjuvant. 1 of R1, R2 = 6-22C alkyl or 6...

?